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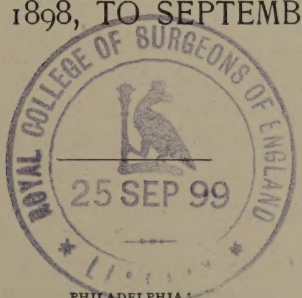

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MEDICAL MAGAZINE.

OCTOBER, 1898.

THE SELECTION OF WINES AND LIQUORS FOR THE SICK.[1]

By B. Franklin Stahl, B.S., M.D.,

PHILADELPHIA,

Instructor in Physical Diagnosis, University of Pennsylvania; Visiting Physician, St. Agnes's Hospital; Registrar, Philadelphia Hospital.

As it is so unusual to find a physician who is perfectly familiar with the various wines, liquors, and malt beverages, and recognizing the unfortunate errors thus occasioned, together with the annoyance of realizing one's incompetence to intelligently order stimulants, I have been led to offer you a few facts, the remembrance of which will greatly simplify the subject, and increase your understanding of a matter much neglected. As a part of your education, as physicians, you are taught little or nothing on this subject. Even were you inclined to seek information bearing on the matter, your text-books would help you little, if at all. Then you would likely seek information from some liquor-dealer, thinking that his training and years of experience would serve you. I do not mean to tell you that, as a result of this paper, you will know more about wines and liquors than the men who have handled them for years, but I do mean that you shall know better than to tell an inquirer that a *brut* champagne is so called in order to give it a name. Yet this assertion was made to me by a salesman in one of our oldest and best liquor stores. The dealer and physician, as well as the layman, have some very unusual and often erroneous notions about stimulants. For instance, I have known a physician to strive to impress a patient with the fact that under no circumstances should

[1] Read before the William Pepper Medical Society, February, 1898.

he take brown stout, as the condition of his circulation would not permit it. Instead, he advised him to use porter. I hope to make it clear to you that such discrimination is an unnecessary refinement in ordering, and, furthermore, to have you see the justice of the patient's criticism of that doctor's knowledge, and the consequent lack of appreciation, on the part of the patient, of the advice bought at a considerable price. The laity have a saying that Pisporter and the Moselle wines are of service to those who would be thin, yet they associate no reason with this statement. Experience may be a sufficient reason, but it is a greater satisfaction to know that the wines grown in the Moselle valley are more acid, because the northern climate does not tend to develop the sugar of the grapes from which these wines are made, and the acid principles are less changed by the intense sun than they are in the southern vintages, and, generally speaking, sugar is fattening, and its absence, and the presence of acid, tend to antagonize fat formation. I shall again refer to this element and its influence on the product of the vineyard. Another disparity between popular impression and the teaching of those who have written on the matter is in the relation of brandy to whiskey. I think most of us have the idea that a brandy-drinker is doing himself more harm than a whiskey-drinker. Yet I have been unable to find any data to justify this idea. The books simply refer to the selection as being a matter of taste and acceptability to the stomach. Of course, taste and acceptability to the stomach are the very best reasons for choosing, and when we think of the enormous quantities of whiskey and the comparatively small amount of brandy consumed in medicine and as a tipple, I think we must find some reason other than taste or condition of the stomach. It is possible that we have an explanation in the greater chances of getting pure whiskey and its lower cost. The fact that nearly all the whiskey is of domestic origin, and the further fact that most of the so-called French brandies are likewise American, should lead us to consider the advisability of asking for a good California brandy, when we need it, rather than take a doctored product shipped back from France. I think I may remark at this point that one of our largest hospitals submitted a number of samples of brandy to a competent chemist, and the report as to purity gave first place to the American brandy. The purchases were made at reliable places, secured as the best obtainable, and the chemist was not aware of the origin of the varieties submitted. I can better bring the subject under consideration to your attention by referring to some points in the history and process of manufacture than by enumerating a list of dogmatic statements of conditions in which you should give this or that stimulant or beverage.

In passing, allow me to offer an example of the indefiniteness of the dictionary as a help to an understanding of the differences between the beverages. Take, for instance, brown stout. You will find it defined as "a very strong kind of beer or ale,—a kind of porter."

I have been impressed with the national stamp upon most of the common drinks. The Esquimo seems to be the only race that has no alcoholic drink. This is because the physical conditions make fermentation almost or quite out of the question, so far as native products are concerned. There seems, however, to have been a wise purpose in this absence of alcohol from the products of the arctic regions, for it is established beyond doubt that alcohol greatly lessens the power to resist cold. The next point is the striking tendency of the inhabitants of the northern climes to indulge in strong alcoholic drinks, and this tendency grows less as we come farther south, until, in the tropics, we have the narcotic beverages and highly spiced drinks taking the place of the strong alcoholic beverages of the northern climate. In Norway and Sweden we have kummel and punch as the common drinks; in Holland, gin; in Scotland, a native whiskey; and in Ireland, a distinctively Irish product of fermentation. It will interest you to know that the word whiskey is of Irish origin,—*usque baugh*, "water of life,"—just as the French have in brandy,—*eau de vie*. Further, the peculiar smoky flavor of the Scotch whiskey is said to be due to the peat used in drying the grain for distillation. It seems reasonable to me that peat may have been the origin of the flavor of Scotch whiskey; but to my mind it is highly improbable that those who distil on an extensive scale should continue to use peat in the process of manufacture. The English are more an ale- and fortified wine-drinking people; yet brandy-and-soda is inseparable from the typical son of John Bull. The Germans consume chiefly beer and light wine, while the French drink wines and brandies almost exclusively. The Spanish and Italians produce and consume a wine that is heavier than that used by the French. In the Indies we have rum as the common drink; in Mexico, a fermented cactus juice, known as pulque. This is of such low alcoholic strength that it is customary to consume it in excessively large quantities, and for the same reason it is so unstable that it cannot be kept over twenty-four hours without undergoing decomposition and becoming very toxic. It is difficult to select a typically American drink, Americans apparently agreeing that all are good, and like goodness, this becomes a relative matter.

Now as to the origin of the names. *Ale* is derived from the Anglo-Saxon *ælan*, "to kindle, to inflame." *Beer*, Anglo-Saxon *bere*, "barley." *Gin*, a contraction from *geneva*, a name used in some parts for gin. It is official under the name spiritus juniperus, and this name

is derived from the use of juniper berries in flavoring. The juniper is so named from the habit of the tree putting forth its younger berries while the older are ripening, hence, *junior* and *pario*. The French for juniper berry is *genièvre*, and the English *geneva* is so derived. Brandy, French, *Brandevin*, refers to the process of its manufacture by heating and the distillation of wine.

In the matter of naming wines, you will remember that port derives its name from the locality of Oporto, Portugal, where it is native; sherry, under the Latin name *vinum xericum*, is from Xeres, Spain; champagne, burgundy, sauterne, bordeaux, cognac, moselle, and others, derive their names from the districts in which they are produced. While still others are named after the estate of the owner of the vineyard, and a further distinction is made in the château brands, which are made from the grapes grown near the château, and presumably handled with especial care.

Formerly the Pharmacopeia made sherry and port official, but the last edition has recognized only a red and a white wine. This was done in recognition of the merits of our American wines.

Let us now take up the consideration of some of the points in the manufacture of the various beverages. They all contain alcohol as their chief ingredient, produced (in the case of wines) by spontaneous fermentation, and induced by the addition of a ferment in the case of beer. But it is not well to start with the impression that all beverages are solely dependent upon alcohol alone for the influence they exert. Starch and sugar, as well as extractives, play an important *rôle* in the results induced, and in no case are the effects produced on the nervous and digestive systems entirely dependent upon, or proportionate to, the amount of alcohol contained in a given beverage. It seems rather to be a new product—the combination of alcohol, ethers, and other principles—that exerts the influence, for it can easily be proven that the same amount of alcohol secured in a given amount of beverage will not induce the same results. Considering the question of alcohol as a food, I shall avoid a discussion of the matter, and simply state that there appears to be sufficient reason to regard it as a food in a limited way. At any rate, it takes the place of nourishment for a considerable time, and thus allows a storing up of nutrient products, and makes the food go farther. Its effect on the circulation and bodily heat may be summed up by saying that it stimulates the heart, forces an increased amount of blood to the surface, producing a sense of warmth, without actually increasing the bodily temperature, and by exposing more blood to the cutaneous surface cools it, and thus causes a loss of bodily heat. The nervous system is tranquillized by small doses; large amounts stimulate the cerebral centres, and, if it be con-

tinued to excess, produce exhilaration, stupor, and incoördination. Small doses stimulate the digestion, and are especially serviceable if taken preceding or with a meal, particularly if there is much fatigue or exhaustion. It is quite generally accepted that alcohol is more of a stimulant than a food. It qualifies the performance of an unusual amount of work for a brief time, but the exhaustion following its accomplishment is out of proportion to the work done. Studies made in military life indicate the most favorable time for the administration of a ration of grog to be after a forced march, or at the termination of some especial effort, or on retiring. In general, it may be said that most good is derived from stimulants taken with a meal, and in amounts just sufficient to stimulate gastric secretion.

I think the time will be well spent in briefly describing the process of the manufacture of beer. Beer is made from an infusion of malt flavored with hops. Malt is barley which has been moistened and allowed to germinate. When the process has sufficiently progressed the process is terminated by kiln-drying. The temperature at which it is dried determines the kind of malt produced. That dried at a temperature below 140° F. is the pale malt used in brewing pale ale; while porter and brown stout derive their color from the malt having been dried at a higher temperature. The degree of heat varies up to a point where a black malt, valued as a coloring and flavoring agent, results. The object of the malting is to convert the starch of the grain into dextrin and sugar. The brewing of beer is divided into three stages: Infusing the malt; then boiling with a requisite amount of hops to give a flavor and to impart a bitter taste, and to exert a preservative influence upon the product, and, finally, the adding of yeast after rapid cooling, to excite fermentation. The process of fermentation is usually completed in three or four days, and during its progress the alcoholic strength of the beverage is developed and carbon dioxide is given off. The resulting product is allowed to clarify spontaneously or "findings" of beechwood chips or isinglass are added to carry down mechanically the floating particles that render it turbid. The beer is now stored in a cool place for from four to eight months before being placed upon the market.

Ale differs from beer in being made from the pale malt, in having a greater proportion of hops, and in possessing more of the aromatic bitter principle derived from the hop. It contains a relatively small proportion of extractive matter, and practically all the sugar of the malt has been consumed during the process of fermentation.

Porter is said to have originated as a side product in the manufacture of ale, and was thus named because it was so cheap that it became the beverage of the porters. It is made from pale malt, but

colored and flavored by the addition of highly dried malt. In some cases it will be found more digestible than ale or beer. Brown stout differs from porter in containing more extractives. Porter and brown stout have the same alcoholic strength, and owe their nutritive value to the extractive matter contained, which is chiefly in the form of carbohydrates. Ale is the strongest of the malt beverages in alcoholic strength, and the hops contained are stomachic and tonic. The malt liquors exert a fattening influence proportionate to the contained extractives, and tend to induce plethora. In persons of a bilious temperament they may produce heaviness and indigestion, or in those who lead sedentary lives they may favor the development of gout. The alcoholic strength of ordinary beer is about 3 per cent., and of ale 6 per cent.

Let us now pass from the consideration of the malt liquors to the subjects of wines. The term is applied, when not otherwise specified, to the fermented juice of the grape. You have already seen that the Pharmacopeia divides all wines into two classes,—white and red. A better division would be into the light wines, containing less than 26 per cent. of proof spirit (you will remember that proof spirit is composed of 49 per cent. of alcohol and 51 per cent. of water), and the fortified or brandied wines, containing more than 26 per cent. of proof spirit and less than 42 per cent. of alcohol. Liquids containing more than 42 per cent. of alcohol are classed as spirits.

Other classifications for wines are into light and heavy, sweet and dry, still and sparkling, natural and fortified. There are certain expressions used in speaking of wines, such as the aroma or bouquet, referring to flavor and odor, body, color, fruitness, astringency (due to the tannin present), sweetness (due to sugar), strength (alcoholic), acidity (organic), sparkle.

A fortified wine is one that has sufficient alcoholic strength to preserve it, and that will keep indefinitely when exposed to the air, while the light wines must be used at once or soon after the container has been opened. As examples of the former you may take sherry wine, and of the latter, you have claret or sauterne.

If we examine the grape we note its skin of varying thickness, and the color contained in it, and the waxy element in the skin to make it impervious to water, which thus helps to preserve the grape. On the stems and skin is to be found the yeast fungus, which is destined to play an important function at a later period in the process of making wine. On section of the grape we note that the juice is contained in many vesicles, which prevents its being lost by a single puncture, and necessitates the grape being crushed in the wine-press in order to secure the juice. The coloring matter in the grape is in-

soluble, except in the presence of alcohol generated by fermentation. This makes the juice expressed from the white and red grape have the same color. There is one exception to this statement,—that is, in the case of the tintilla grape, which has a red juice, and is cultivated to a considerable extent to yield a coloring matter for other wines. In preparing a wine that will possess astringency, the stems and seeds are allowed to remain in the "must" in order to extract the tannin contained. You will appreciate that there are many elements that weigh in the production of a good wine, and that from year to year it is difficult to keep a certain brand at a fixed standard. Care in manufacture and handling at all stages will exert an influence, so too the grape employed, the vine, the soil, the climate, the season, the latitude, particular years, the ripeness of the fruit, and the care used in the selection of the grapes for the press. Ordinary grape juice has no odor, and the aroma of a wine is developed during fermentation or after bottling. The acids of the grape are chiefly tannic, tartaric, and malic, and, as the process of ripening progresses, these acids are replaced, in part, by sugar, and the possibilities of the alcoholic strength of a given wine are dependent upon the amount of sugar developed. It is this insufficient development of sugar that embarrasses the growers of grapes in the Rhine and Moselle districts, and produces a wine that is too sour, or one that requires the addition of sugar, and thus the relative proportions of the constituents are changed. From the foregoing you will perceive that the hot countries, like Spain and Portugal, will produce grapes with a larger amount of sugar, and these become capable of producing a larger percentage of alcohol when all the sugar is fermented. Late in the season, when the ripening of the grape is determined, the weather exerts the greatest possible influence on the season's vintage. The danger from this factor in the season's vintage is most felt in the northern countries, such as along the Rhine. It is the practice in gathering the grapes for the manufacture of certain varieties of wine to select from day to day those bunches that have attained complete ripeness. The grapes that are to give the Tokay wine are allowed to remain on the stem until the early frosts. Thus perfect ripeness and partial desiccation increase the proportion of sugar and give a wine of full and luscious flavor.

This full ripeness may not be allowed in the production of red wines, because the color of the wine depends upon the extraction of the pigment from the grape, and this can only be accomplished by alcohol generated in the presence of the acids in the grape. The richness of the color will be dependent upon the acid present in the grape. The astringency exerts a preservative influence, and favors precipitation of insoluble particles.

A wine that is fermented rapidly does not have time to develop bouquet or flavor, and the product is thin and poor, and defective in keeping qualities. On the other hand, where fermentation proceeds slowly and so completely as to consume nearly all the sugar, while the wine is less fruity, it is drier and has more bouquet or aroma. This, you will appreciate, would more likely be found in the northern wine districts of the Rhine, where the wines have considerable acidity and a pronounced bouquet.

According to the temperature will be the time required for the completion of the fermentation, and the latter will vary from two to three days in the warmer countries to a much longer time in the cooler climates. To the expressed juice with pulp and stems in the fermenting vat the term "must" is applied. The "mark" is the residue left after separating the fermented liquid. As the fermentation nears completion, there is deposited "lees," composed of exhausted ferment, organic matter, and cream of tartar. The wine is now racked off into casks, where the fermentation is still continued with less activity, and this process of racking is repeated several times during the first year. In certain cases this process of racking is continued from one to four years before bottling. This is especially true of the finer varieties, and it is done to promote certain changes in the wine that are dependent upon the size and nature of the containing cask. In a cask wines or liquors increase in alcoholic strength, because of the evaporation of water through the wood. The object attained in the use of huge wine-tuns is the small wine surface exposed to the action of the air. There are certain qualities that cease to be developed when the wine is bottled, and, in general, it may be said that but few wines or liquors improve in glass, while some positively deteriorate.

The next step consists in clarifying or "finding" the wine. This has for its object the removal of the floating impurities and organic matter, rendering the wine more clear, and aiding in its preservation. This is accomplished by the addition of white of egg, isinglass, or, in some countries, of plaster of Paris.

The red wines are rough in proportion to the contained color, and contain from 8 to 11 per cent. of alcohol. They are more nutritive, more slowly taken up, and, because of their acidity, are greater aids to digestion than the white wines. The white wines are more rapidly assimilated, and may therefore be regarded as more stimulating, and contain from 9 to 12 per cent. of alcohol.

The line between the natural and fortified wines is quite distinct. In the former class you have the German wines, including the special brands of Rhine and Moselle wines; the French, including burgundy, claret, bordeaux, sauterne, and champagne.

The fortified wines include sherry, port, malmsey, tokay, madeira, and similar vintages.

A perfect wine is said to be one in which the ingredients—alcohol, water, sugar, ethers, acids, and extractives—blend so perfectly that no one element is distinguishable. Some of the clarets are examples.

A champagne containing enough sugar to make its presence appreciable to the taste, and to leave a residue on evaporation, is said to be a sweet wine. The "dryness" of a champagne is estimated by the amount of sugar contained. This enables one to select a wine with regard to the amount of sugar contained in it. The following terms are used to indicate the varying amounts of sugar in different varieties: "dry," "sec," "extra dry," and "brut." The "brut" brand has this point to distinguish it from the others, it is a natural wine,—that is, it is not "doctored" by the addition of sugar,—and the sugar of the grape is entirely consumed in the process of fermentation. It is thus the driest wine, and would be especially indicated in those cases that have manifested an inability to assimilate the sweeter forms of wine.

In a few words I may point out to those of you who have forgotten, how a champagne differs from an ordinary wine. The wine to be used in making champagne, after having been fermented in the usual manner, is allowed to stand until the following spring, to become bright and clear. It is then bottled and "dosed" with a concentrated sugar solution, appropriately flavored and brandied, and the bottles are corked. There is now a second fermentation induced, and in this case the carbon dioxide is not allowed to escape. It is this second fermentation that gives this wine its especial characters. The bottles are shelved so that the sediment produced will collect in the neck of the bottle, and this process of sedimentation is continued from two to nine years. The next step is the disgorging process, which is carried out by skilled hands. It is the process of allowing this precipitate to blow out of the bottle, with little loss of the wine. The bottles are refilled, securely corked, and are soon ready for the market. One of the evidences of the worth of a champagne is found in the way it gives off its carbon dioxide. It should be yielded slowly and in a manner to produce a "creamy" effect.

The dryness of a wine measures the conversion of the contained sugar into alcohol. True dryness is accomplished by a slow process, and some sugar may be detected after several decades. Ordinarily there is added with the flavoring 8 per cent. of concentrated syrup for the "sec" brands of champagne, and for the others, 16 per cent. of the syrup. Many brands of champagne have a dry taste, because less than the usual amount of sugar has been added, or because the acid present, by its sour taste, masks the sweetness. This acidity may be

detected by allowing all the carbon dioxide to escape, and then testing the wine with litmus.

Let us now consider the matter of the selection of the various wines. In the case of the German wines we must remember that for importation they have been fortified to a sufficient extent to bear exportation, but not sufficiently to make them keep when exposed to the atmosphere for any considerable time. This applies to all the light wines. Their chief use is as a beverage, aiding digestion when taken in moderate quantities with a meal.

Liquors or spirits are the product of the distillation of fermented liquids. Here again alcohol is the chief constituent, but not the only one; and, just as we have seen and shall further learn, the effects produced are not always proportionate to or dependent upon the alcohol alone. The flavor and odor will depend upon the source from which the spirit is derived, and the color upon the caramel added, or the tannin extracted from the casks in which it has been stored.

The chief spirits are included under the heads brandy, whiskey, rum, and gin. I have already referred to the term "proof spirit," and liquors are said to be over or under proof. Brandy, deriving its name from the German *Branntwein* and French *Brandevin*, means wine subjected to heat. Brandy is a spirit produced by the distillation of wine. The quality varies with the grade of wine used, and the care exercised in its manufacture. The white wines are used in preference to the red. The brandy distilled in the province of Cognac, France, is most favorably known, so much so that the name cognac is a synonym for the spirit. The aroma of the liquor is derived from the ethers contained in the wine distilled. It improves in flavor by keeping in the cask. When new, spirits are usually over proof, but, as found in the market, they are generally 10 or 15 per cent. under proof.

Rum is manufactured in the Indies, from the fermentation of the skimmings of the molasses-barrels. This mixture is allowed to ferment, then distilled, producing the Jamaica rum, which is the variety most favorably known. It, like brandy, derives its color from the addition of caramel. It improves greatly by keeping, and is capable of making a fine, soft, mellow liquor.

Whiskey or spiritus frumenti—(frumentum, grain or corn)—is a spirit, derived from barley which has been malted. The characteristic flavor is derived in the process of kiln-drying the grain. The smoky odor is produced when peat or turf is used in the process of kiln-drying. It improves with age, if kept in wood. From a medical stand-point it will meet the same indications that demand the use of brandy, and acceptability to the taste and stomach and purity of the products are the only points to be considered. Brandy, rum, and whiskey are of about the same alcoholic strength.

Geneva, Holland, and Schiedam are terms used to designate what is familiar to us under the name gin. I have already referred to the derivation of its name. It is prepared by distilling fermented grain. The barley or corn used differs from that employed in the manufacture of whiskey, in that it is not kiln-dried. Furthermore, the product is redistilled in order to obtain a neutral spirit, and this is flavored with oil of juniper berries and other aromatics. It is required to be sold not stronger than 17 per cent. under proof. A sweetened gin is sold in the market under the name of "old Tom."

Of Chartreuse, Maraschino, and other *liqueurs* I shall not speak, save to mention that Curaçoa will often be found a pleasant and advantageous addition to your prescriptions as a vehicle.

The spirit is the worst form of stimulant for daily use. New spirits are particularly harmful because of the contained fusel oil. We have seen how individual skill in handling and a great variety of factors exert an influence upon the product of the vineyard. This variable element is much less potent in the manufacture of spirits.

In the manufacture of whiskey there is used sweet or sour mash. In making sour mash a mixture of corn (8 parts), rye (1), and malt (1) is employed. This is scalded with the refuse liquid from former distillations, which contains the ferment required to develop alcoholic fermentation. Sweet mash is the same grain combination, but water is used instead of the refuse liquid of former distillations, and yeast is added to induce fermentation.

The Pharmacopeia requires that whiskey and brandy shall be kept at least four years before being dispensed. There is a pure rye whiskey made without corn or malt.

Having now reviewed some of the points regarding the various wines and liquors, a view of the following table of alcoholic strengths by Duckworth will be of interest:

Spirits contain from 35 to 44 per cent. of alcohol.	
Port	19
Madeira	18
Sherry	17
Champagne	11
Burgundy	10
Bordeaux	8
Rhine wine	8
Porter	6
Beer and ale[1]	3 and 6

Chambers enumerates the following as the classical indications for the use of alcohol: (1 *a*) As a tonic. For overworked and nervous

[1] It is claimed that American beers average from 4 to 10 per cent. of alcohol.

people with whom great fatigue is associated with loss of appetite. (*b*) For people with enfeebled digestion. Moderate doses stimulate increased flow of gastric juice. (*c*) In cases of protracted convalescence. It need hardly be mentioned that in certain cases, by reason of the nature of the malady, and the disposition of the individual, as well as from an inherited predisposition to alcoholism, you should be doubly careful in ordering stimulants.

(2) As a vascular and cardiac stimulant. In those who lead sedentary lives it is one of the best cardiac stimulants; it improves the quality of the blood, the character of the pulse, and tones up the relaxed arterial system. Here strong spirits should be given, and it is best to administer them in diluted form. When it is remembered that the act of swallowing a stimulant increases the rapidity of the pulse, it will be seen that there is an advantage in having it sipped slowly.

(3) In nervous diseases it is often very useful, and just as often it is dangerous, because of the possibility of forming the habit. In cases of nervous dyspepsia, accompanied with pain, it will often act as a local anesthetic.

In old age it is very valuable as a tonic, and here it is comparatively safe. In disease, children bear stimulants wonderfully well, and in cases of capillary bronchitis, diphtheria, and scarlatina the administration of spirits in large doses is often the only salvation of your patient. In all cases where you are administering spirits you should be influenced in your dosage not so much by fixed amounts as by the effect produced. If muttering delirium becomes less, if the pulse becomes fuller and slower, the respirations improve in character, and the skin becomes more moist, if dry, or less leaky, if relaxed, and the temperature is even slightly lowered, you know your stimulant is doing good. In grave cases you are justified in pushing it until the odor of the stimulant can be detected on the breath. As the condition demanding it improves, and the patient is able not only to take but to assimilate more food, you will gradually withdraw the large doses, and reduce the amount administered to a tonic dose. I wish to further emphasize the variable amount of stimulant that may be borne by persons in certain conditions. For instance, it is no rare thing for a patient with septicemia to take a quart of whiskey and considerable champagne in a day. This very tolerance would seem to prove the need of the spirit administered.

Of the physiological action of the various beverages it may further be mentioned that whiskey and gin are diuretic; whiskey is somewhat laxative, while brandy is astringent and constipating.

Roberts has made some interesting studies of the effect of wines and liquors on salivary and gastric digestion. He experimented on

salivary digestion by making a standard starch solution and adding thereto a certain amount of filtered saliva. From time to time portions of the mixture of starch and saliva were tested by the iodine method for the presence of starch, and the time required for its digestion was noted.

The table appended will express the retarding influence exerted by the various liquors on the process of salivary digestion. It will be noted that diluted alcohol and gin had about the same effect. Brandy and whiskey produced an inhibiting effect out of all proportion to the contained alcohol. This same disparity between the amount of alcohol contained and the inhibitory influence on digestion was also observed in the case of malt liquors and wines. The light and strong wines and beers, even in the small amount of .25 per cent., greatly delayed the achromatic point, and 1 per cent. paralyzed the salivary ferment. This is due not to the alcohol but to the acid contained.

Let us pass now to the consideration of the effect of alcohol on peptic digestion. Here the effect produced was entirely proportionate to the contained alcohol. Alcohol, it will be seen from the table, in quantities under 10 per cent., exerts almost no retarding effect upon digestion; with 10 per cent. it was appreciable; with 20 per cent. it was quite distinct, but still only a slight retardation. Above this point, however, the inhibitory effect of alcohol increased rapidly.

From these tables it would appear that the amount of liquors ordinarily consumed with a meal exerts very little retarding effect on gastric digestion. Estimating an ordinary meal as weighing two pounds, two ounces of brandy or whiskey would only represent 5 per cent. of proof spirit, and by reference to the table it will be seen that this amount does not hamper digestion.

These experiments, therefore, indicate that ardent spirits, as usually employed dietetically by temperate persons, act as pure stimulants to gastric digestion, causing an increased flow of gastric juice, and stimulating the muscular contractions of the viscus, and so accelerate the speed of the digestive process in the stomach.

The beers and wines are quite different in their action, and exert an inhibiting influence on peptic digestion out of all proportion to the contained alcohol.

In these experiments a test-meal was prepared (*vide* table), and the wines and spirits added in the proportions as indicated, in the table.[1]

Without going into the subject extensively, it may be stated that

[1] Test Meal.—Consisting of two grammes of beef fibre; + 0.15 hydrochloric acid; + 1 cubic centimetre glycerin extract of pepsin; + varying proportions of proof spirits, brandy, whiskey, and gin added, and water, 9.5 per 100 cubic centimetres.

wines and beers, taken in moderation, in quantities of a glass or two with a meal, will exert a helpful influence on gastric digestion. But you will appreciate that when consumed in quantities not infrequently used, a pint of claret, or larger amounts of beer, they cannot help exerting a decidedly retarding influence on digestion.

Considering now the best time for the administration of stimulants, it may be stated, in general, that they should be given with food, or a part taken, in certain instances, just before food. In this connection I may quote Dr. Osler's oft-repeated expression, "The man who drinks before noon is lost."

Chambers thus expresses his views on the moderate use of alcohol by certain individuals: "The laborer whose limbs are stiff with his day's toil, the brain-worker who still more acutely feels the wear and tear of bread-winning, are not wasting the money they earn with which they buy a fair ration of beer or wine for their evening meal."

The indications for the various beverages may then be summarized as follows:

The malt liquors are indicated as fattening agents, to stimulate digestion, and as mild tonics and stimulants.

The spirituous liquors are required in acute illness, and are beneficial in old age.

The wines are most useful in convalescence, and in those cases where we are unable to give the stronger liquors, because of their unacceptability to the stomach. Furthermore, they have a fixed place in our dietetics.

Finally, considering some special conditions where selection must be made, it may be said that in anemia, in conditions included under the term malnutrition, and in convalescence, you will do well to order a good claret, burgundy, or bordeaux wine. The lighter forms of good quality are best for daily consumption for brain-workers, who lead sedentary lives, and who need a digestive and stimulant. You will hasten recovery in many by ordering a light luncheon, accompanied with wine, between each meal.

Gout is regarded by many as the child of port wine. Next in order as causative of gout are to be mentioned champagne, sherry, madeira, burgundy, and malt beverages. Cider is almost as potent in its causation as are the wines. Claret is almost the only safe wine in gout.

In diarrhea and dysentery you will find brandy of service, especially in the old. Claret is also very valuable; in Germany it is frequently used to the exclusion of water.

In diabetes, claret is safest, but burgundy, hock, or dry sherry, and sometimes whiskey, will be found to agree.

In fevers, if self-limiting and of moderate severity, alcoholic stimulants are not indicated until convalescence is established, when they may be given with advantage. You may regard it as an indication for alcohol when the fever is very high from the outset, and the heart appears embarrassed, as shown by a weak first sound.

Chronic alcoholism, in nearly all instances, may be successfully treated without liquor. When it is required, it should be given in the form of spirits, and in large doses.

In liver disease it is generally contraindicated. If demanded, claret or brandy, well diluted with an aerated water, should be chosen.

Insomnia is often relieved by mulled (spiced) wine, or by whiskey and hot water. Beer is also of service in this connection. I need hardly suggest the danger of the formation of the habit under these circumstances; nor need I remind you that whiskey is best for the old.

In phthisis the malt liquors are of service early, and the spirituous liquors later in the disease. Remembering that here more than in almost any other disease the digestion is of greatest importance, you will be governed entirely by the effect produced on the digestion.

In chronic rheumatism and renal disease they may only be given when the demand is greater than the contraindication. And all the while the effect produced must be noted. Well-diluted spirits will be found most serviceable.

In scurvy malt liquors are especially serviceable, yet some do better on claret or brandy and water.

Thus it will be seen that, while certain suggestions can be made quite positively and on well-founded reasons, there must remain many instances where your individual judgment must come into play, and I trust I have, in my review of the process of manufacture and by enumerating the constituents of various wines, helped you to a fuller and more intelligent understanding of this important and much obscured subject.

TABLE SHOWING THE EFFECT OF SHERRY AND HOCK UPON SALIVARY DIGESTION.[1] (ROBERTS.)

Proportion of Sherry or Hock contained in the Digesting Mixture.	Sherry.	Hock.
0.25 per cent.	8 minutes.	16 minutes.
0.5 "	30 "	80 "
1. "	No action beyond soluble starch.	No action beyond soluble starch.
2. "	No action.	No action.
40. " neutralized	4 minutes.	4 minutes.

[1] Time normally required equals four minutes.

TABLE SHOWING THE EFFECT OF ALCOHOL, BRANDY, AND WHISKEY ON SALIVARY DIGESTION.[2] (ROBERTS.)

Proportion of Proof Spirit, Brandy, or Whiskey in the Digesting Mixture.	Proof Spirit.	French Brandy.	Scotch Whiskey.
5 per cent.	4 minutes.	4 minutes.	4 minutes.
10 "	4 "	Very slow action.	30 "
20 "	4 "	No action.	Very slow action.
40 "	8 "	"	No action.
60 "	14 "	"	"
70 "	20 "	"	"
90 "	Very slow action.	"	"

[2] Time normally required four minutes.

TABLE SHOWING THE RETARDING EFFECT OF WINES AND LIQUORS ON PEPTIC DIGESTION.[3] (ROBERTS.)

Wine, Liquor, or Beverage added.	Proof Spirit, Brandy, Gin, or Whiskey.	Sherry.	Port.	Hock.	Claret.	Champagne.	Burton Ale.	Lager Beer.
5 per cent.	100 minutes.	115 minutes.	100 minutes.	. . . . .	. . . . .	. . . . .	. . . .	. . . . .
10 "	115 "	150 "	115 "	100 minutes.	100 minutes.	90 minutes.	115 minutes.	100 minutes.
15 "	. . . . .	200 "	150 "	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
20 "	135 "	200 " Embarrassed.	180 "	115 "	140 "	100 "	140 "	115 "
30 "	180 " Embarrassed.	Almost no digestion.	200 " Embarrassed	150 "	180 "	130 "	200 "	140 "
40 "	300 minutes.	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
50 "	Almost no digestion.	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
60 "	. . . . .	. . . . .	. . . . .	Embarrassed.	Embarrassed.	180 "	Embarrassed.	180 "

[3] One hundred minutes is the normal time for the digestion of the test-meal given. The time required to digest the meal to which the beverages were added is given in the table.

AN APPARATUS FOR PARALYSIS OF THE LOWER EXTREMITY.

By Gwilym G. Davis, M.D.,

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Surgeon to the Orthopedic Hospital, etc.

The apparatus here shown was devised for use in cases of infantile paralysis with the object of aiding their walking. The difficulties experienced by these patients are usually due to the paralysis of the anterior muscles of the limb. They are principally dropping of the foot, lack of ability to extend the flexed knee, and external rotation of the whole limb. The dropping of the foot causes the toes to catch in the carpet or any slight projection and the patient trips. The inability to extend and fix the knee causes it to suddenly bend, like the closing of a knife-blade, when pressure is made upon it, and the patient then drops. The external rotation produces an awkward way of walking that attracts increased attention to the deformity. The toe-drop is counteracted in this apparatus by the ankle stop-joint. This allows the ankle to flex but not to extend beyond a right angle. The sudden bending of the knee is prevented by putting the joint of the apparatus posteriorly instead of on each side, as is usually done. Two elastic bands on each side of the knee, as shown in the illustration, act as substitutes for the paralyzed rectus femoris. These bands tend to straighten the flexed knee. As the knee is bent so does the elastic force exerted by these bands increase. When no apparatus is worn a paralyzed limb can be used for walking

with a moderate amount of security, provided the knee-joint is so loose as to allow of a certain amount of hyperextension,—that is, if the knee is slightly bent forward instead of, as normally occurs, backward. Where the joint is not so loose that this fixation occurs of itself, then the patient will aid in producing it by first putting the foot on the ground and then deliberately pushing the thigh back with the hand. So that it is not at all uncommon to see paralytic patients walking with the hand on the thigh. The necessity of doing this is obviated by the use of this apparatus. The third difficulty—that of external rotation—is met by continuing the apparatus up the thigh to a hip-band. This is made of mild steel covered with leather. It is bent to fit the form, and the limb is placed in any position desired by twisting the steel side-piece below the hip-joint by means of wrenches. One wrench grasps the side-piece close up to the hip-joint, while the other wrench is applied three or four inches lower down, and the apparatus twisted in or out as desired. In many cases it is not necessary to extend the apparatus higher than the thigh, because there may not be sufficient tendency to external rotation to require it. It is made by D. W. Kolbe & Son.

LEUCINE AND TYROSINE, AND CRYSTALS SIMULATING THEM IN URINE (SALICYLIC ACID).

By William S. Newcomet, M.D.,

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Most text-books contain only a short account of leucine and tyrosine, although they have illustrations of their microscopical appearance, which is undoubtedly the best method for teaching their recognition; at times, however, other substances resemble them so closely that it would be difficult to tell whether the crystals were leucine and tyrosine except by further chemical investigation, which must be undertaken with great caution, owing to the complex nature of the urine. When leucine appears in spheres large enough to show striations, they are perfectly typical, but generally they are somewhat indistinct and resemble spherules of other compounds. The druse-like arrangement of tyrosine is often simulated by other substances.

Since the introduction of coal-tar products into our list of remedies the elimination of bodies in the urine which are liable to crystallize

becomes more common, and although we may be led to suspect the nature of these crystals from the clinical history of the case, no reliance must be placed upon conclusions drawn from this source.

In the following case, a man, about 60 years old, in good physical condition, complaining of rheumatic pains, was given five grains of salol every three hours, and requested to bring a sample of his urine; in a few days he returned with it, but, unfortunately, only brought a small quantity, and the next sample contained nothing of any interest, although he continued the drug.

The urine was of a dark yellowish-brown color, small white dots could be seen floating through it, and at the bottom was a whitish precipitate; it contained no albumin. When examined under the microscope groups of crystals in sheaves resembling tyrosine and also spheres like leucine were seen, otherwise nothing unusual appeared. The condition of the man did not warrant the suspicion of these substances, and generally previous preparation is needed to find them, therefore salol was thought to be the cause.

A small quantity of the urine was shaken with ether and the etherical extract evaporated; this was then tested with ferric chloride, which gave the characteristic reaction of the salicylates. A deep blue color was obtained by dropping a drop of ferric chloride on filter-paper previously moistened with the urine. Piria's test for tyrosine is somewhat similar to the above, but, as before mentioned, some preparation to purify it from the urine must be carried out before the test can be employed.

What condition of the urine causes this peculiar separation of these crystals is hard to answer; their occurrence is very rare, the size of the dose of the drug does not seem to effect it, nor does rendering the urine decidedly acid or alkaline. All experiments for producing them artificially failed. Salol is supposed to be broken up in the body into salicylic and carbolic acids, and to be eliminated from the system as they are, the former as salicylic acid, salicyluric acid, indican, and pyrocatachin, the latter as sulpho-carbolic, hydrochinon, and glycouronic acid.

These crystals were, in all probability, salicylic acid or some derivative, such as salicyluric acid. Both of these substances crystallize in needles, and the last usually arrange themselves in rosettes when prepared artificially. In a few experiments the crystals obtained from the urine by extracting them with ether, and allowing it to evaporate, crystallized in rosettes. The melting point of these crystals corresponded to that of salicyluric acid and left a black deposit, and did not sublimate, when the heat was raised, as does salicylic acid. The crystals from the urine melted near the melting point of salicylic acid

and did sublime, leaving only a slight residue probably due to impurities; from this it would appear that these crystals were salicylic and not salicyluric acid.

The round spheres were but urates of sodium and ammonium, which could easily be recognized by their solubility in acetic acid.

In the case where leucine and tyrosine were found, it was not the urine but the history that suggested them. The patient, who was under the care of Dr. J. P. C. Griffith, had malignant jaundice. Upon examination the urine was found to be of a cloudy yellowish-red color with a yellow sediment, and when filtered of a reddish color. The residue left upon the filter-paper was yellow. The froth, upon shaking, was also decidedly yellow; it had a peculiar odor, not that of normal urine but more like liver. The specific gravity was 1018; its reaction was neutral and contained about 2.3 per cent. urea (estimated by the hypobromite method). Albumin was present in about one-twelfth moist bulk. Gmelin's test (nitric acid) showed the presence of bile, and confirmed the deep yellow color of the sediment and froth.

Microscopically, it contained casts both granular and cellular, leucocytes and epithelium of various kinds; some of these were deeply stained yellow while others were not. This staining did not seem common to any one class of cells. A number of small round bodies, some with thorns upon them and more or less clustered, were evidently bile-salts. Spermatozoa and a few unimportant crystals were present.

Suspecting leucine and tyrosine, about one-half cubic centimetre of urine, which had been previously boiled and filtered to remove the albumin, was evaporated slowly over a lamp by adding a few drops at a time, not allowing the evaporation to go on too fast. It should not be allowed to dry, and enough fluid should be left to allow it to adhere to a slide. The specimen contained numerous crystals, which were phosphates, urea, and the commoner elements of urine; between them were numbers of small round bodies which looked like red blood-corpuscles both in size and refractive appearance. Here and there were small crosses, about three times the size of the others, with striations. They were undoubtedly leucine and tyrosine, but poorly crystallized.

This is the simplest method of obtaining these crystals, but, as shown, is unreliable, considering that other substances crystallize in the same form; and since the large amount of phosphates, urates, and other constituents that crystallize in accordance with their solubilities and concentration necessarily interfere with obtaining good crystals of a substance held in solution in less proportions. The following method, therefore, is used to remove these ordinary products of normal urine: about twenty-five cubic centimetres of urine are boiled and filtered to remove any albumin, mucus, or insoluble particles,

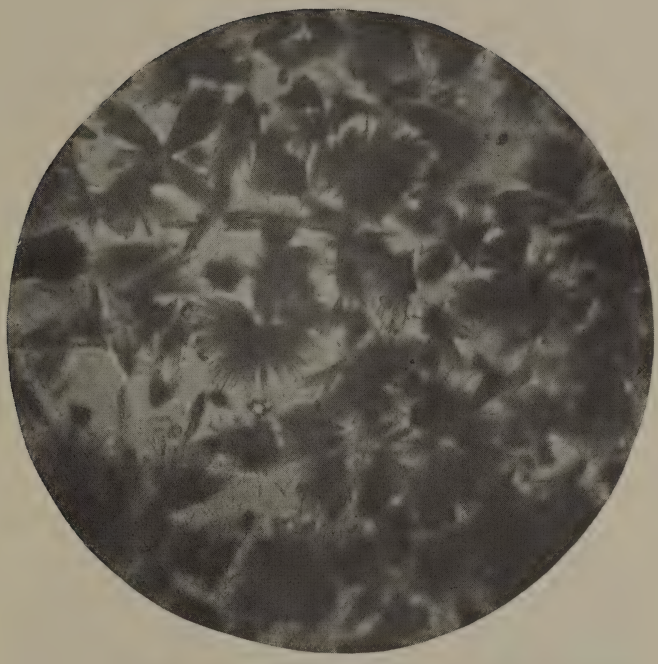

FIG. 1.—Salicylic acid crystals, with urate of ammonia from urine. One-fourth inch objective.

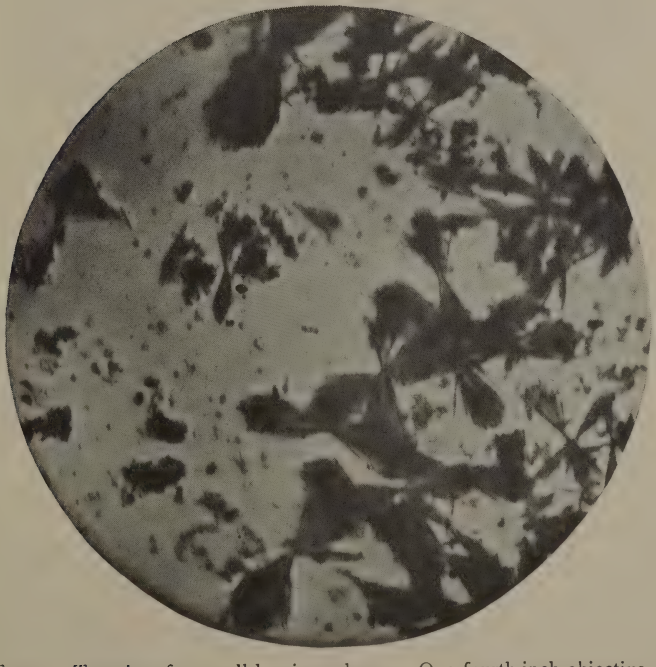

FIG. 2.—Tyrosine, few small leucine spheres. One-fourth inch objective.

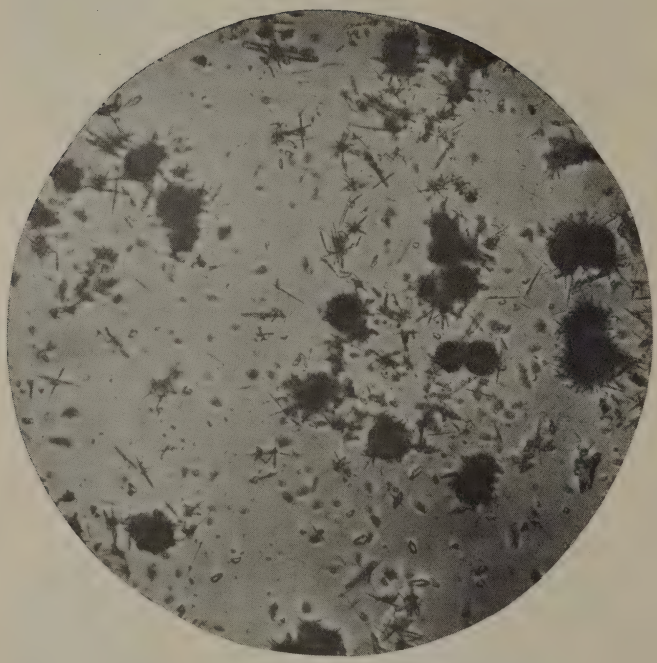

FIG. 3.—Leucine. One-fourth inch objective.

then a small quantity of ammonium hydrate is added to render the urine alkaline; this is followed by a solution of basic acetate of lead until there is no further precipitation. It is then filtered and sulphuretted hydrogen is passed through the filtrate to remove the excess of lead; the precipitate is again filtered off and the clear fluid evaporated slowly to obtain the crystals.

If a few drops of mercuric nitrate be added with the acetate of lead, and the filtrate, after removing the precipitate, produced by sulphuretted hydrogen, be passed through animal charcoal, the crystals will be found to be larger and freer from impurities than by simply carrying out the method alone.

The leucine and tyrosine may be separated by recrystallization, the first remains in the mother liquor, while the second crystallizes around the edge; by two or three recrystallizations they may be separated, and will be pure enough to give a good chemical reaction. If sufficient care is used this may be accomplished with a small amount of urine, as usually the supply is limited.

Sherier's test for leucine usually reacts well,—*i.e.*, a small quantity of leucine is evaporated to dryness and allowed to cool, when a small quantity of caustic soda is brought in contact with the residua, and a yellowish-brown color is produced. This test is somewhat like that for uric acid, except a different color is produced. Tyrosine, too, responds similarly; usually the mass left after treating it with nitric acid is crystalline, and upon the addition of caustic soda a yellowish-brown residue is left, but not so oily as leucine.

Leucine sublimes unchanged, although the salicylic acid does the same, but during the sublimation of leucine the odor of amylamine may be detected. Salicylic acid does not usually crystallize in spheres.

The test with cupric hydrate requires more leucine than can be derived usually from a small sample of urine.

Piria's test may be employed with a small amount of material, but is rather lengthy and requires extreme care. A small quantity of tyrosine is moistened with sulphuric acid, heated gently for half an hour, then diluted with a little water, neutralized with barium carbonate and filtered. If the quantity is too small, however, the liquid may be poured off, carefully avoiding the precipitate, then evaporated. If not clear, the precipitate should be allowed to settle again, a small quantity of a solution of ferric chloride added, when a violet color will appear.

In conclusion, it has been shown that two substances may occur, which both together may resemble leucine and tyrosine very closely, but by chemical means the doubt may be easily set aside with reasonable care. It is an easy matter to carry on a chemical investigation

when the quantity to be had is large, but, as a rule, these interesting specimens are limited, and therefore the surest tests for discrimination are the ones usually sought for, as many physicians have not the means for any exhaustive chemical research.

CANCER OF THE PANCREAS, WITH REPORT OF A CASE; AUTOPSY NOTES.

By James Darrach, M.D.,

AND

A. M. Davis, M.D.,

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The patient was a woman, unmarried, aged 62 years; family history negative. She was of spare figure, active, energetic, and untiring. She had enjoyed almost uninterrupted good health and had a good appetite, with excellent digestion, up to the time of the present attack.

On July 1, 1897, about 3 A.M., she was awakened by a severe pain in the small of the back,—dull lumbar pains had been complained of during the month previously. It extended upward along the spine, passing around the right side to the epigastric and hypochondriac regions. She was first seen professionally during a similar attack August 21. At that time pain in the stomach followed the eating of food, nausea and vomiting were frequent, and there was considerable emaciation. Pain and tenderness in the epigastric region were marked symptoms; the pain alternated with nausea, and when the latter was present the former seemed less severe.

Physical examination at this time was difficult, because of the exquisite tenderness present over the epigastrium. On making careful palpation and percussion, however, no tumor could be felt; the extension of the tenderness to the left side suggested some peritoneal inflammation, and at different times there was a sensitiveness over the whole abdomen. The character of the pain was generally dull and aching, at times lancinating (as if knives were being thrust through her from side to side), and at times agonizing; she at other times described the feeling as a deathly distress. It was accompanied by a sense of deep-seated pressure or of a dragging weight back of the stomach.

Nausea was a most constant symptom, accompanied by occasional vomiting, with or without reference to the taking of food; it was always produced or aggravated by pressure. Emaciation became ex-

treme. There was no jaundice. The surface of the body, as the disease progressed, presented a sallow, anemic appearance, while the skin covering the face resembled that seen in Addison's disease.

The urine was normal until a few days before death, when it contained bile, but no albumin. Constipation persisted throughout the course of the disease, and for periods of a week there was no movement at all, although purgatives and active enemata were freely given. Occasionally, after severe attacks of pain, several loose movements occurred, but constipation was the rule.

The stools consisted for the most part of scybalous masses with mucus, and at times small quantities of blood. On one occasion quite a large mass of blood and mucus was discharged from the bowel. Fatty matter was once detected in the form of a few very small flakes, which were soluble in ether. The contents of the bowel were constantly examined for the presence of fat, but it was always absent, with the exception just noted.

The vomitus consisted of undigested food, mucus, and blood, being at times "coffee-ground" in character. The liver was found to be progressively enlarging, but not nodular, extending several fingers' breadth below the costal margin, and three weeks before death (October 31, 1897) careful palpation revealed the presence of a tumor in the epigastric region, which was fixed and tender on pressure.

The ascending and transverse colon were almost always packed with feces, rendering a thorough physical examination extremely difficult. At this time several nodules could be distinctly felt in the hypogastric region, giving rise to a suspicion of cancerous growth; they, however, disappeared after brisk and active enemata, proving them to be fecal in their nature.

The temperature at the onset was variable, ranging from 101° F. in the evening to 99° in the morning. Several weeks before death it dropped to normal, and remained so until a few days before, when it reached 104°, becoming subnormal just before the end.

A rather peculiar symptom, and one not previously mentioned, was the constant dribbling from the mouth of salivary fluid during five weeks preceding death. Dr. Battersby has collected evidence with much pains in favor of the pancreatic origin of this fluid.

The autopsy revealed the following:

General Appearance.—Body of an emaciated female; rigor mortis well marked; slight post-mortem discoloration over both gluteal regions was noticed. The skin presented a sallow, anemic appearance, being almost gray in color, and lying in loose folds over the anterior surface of the abdomen, which was depressed below the level of the ribs. The lips and finger-tips were entirely colorless, the eyeballs being sunken deeply within their orbits.

Abdomen.—On opening the abdominal cavity the peritoneum and mesentery were found to be dry and sticky, the latter being non-adherent, excepting about the region of the greater curvature of the stomach. No evidences of ascites were found. The intestines were not distended with gas; the anterior surfaces of the stomach and liver were in plain view.

Liver.—In situ. The anterior surface of the liver extended two fingers' breadth below the costal margin, reaching at least one-half inch to the left of the median line. The anterior surface was studded with gray-white nodules, ranging in size from that of a pea to a cranberry, many of them being umbilicated. These were seen thickly scattered both anteriorly and posteriorly, and on section the whole right lobe was found infiltrated with nodules.

The left lobe was firmer in consistency than normal, slightly lobulated, but free from nodules. On section the substance was light-gray in color, showing evidences of fatty degeneration. The gall-bladder was free from calculi, moderately distended with bile, the common duct being patulous.

Stomach.—This was found situated in its normal position in the epigastrium, the pyloric end being partly overlapped by the liver. The organ was partly collapsed, containing but a small quantity of acid fluid mixed with milk coagulæ. On elevating the posterior wall many firm adhesions were found binding it to the pancreas. The walls were thinner than normal; the gastric glands being atrophied. Posteriorly, a few areas of post-mortem congestion were observed. The pylorus showed no sign of obstruction, the orifice being patulous.

The *spleen* was slightly atrophied, the capsule showing several "milk spots." On section the pulp was firm and dark, indicating passive congestion.

Pancreas.—On separating the adhesions which bound the stomach to the pancreas, the latter was found extending from the left hypochondrium to the under surface of the liver, being in close proximity to the latter. The right third of the organ (or the head) was distinctly larger than the remainder, presenting almost an ampullated appearance. On section this portion was found to be firmer than the rest, containing many small, white nodules no larger than a millet-seed. The affected area was grayish-white in color, dry, and granular, the remaining portion being apparently atrophied. Although lying closely to the liver, it was not adherent to the latter.

Intestines.—These were apparently normal, the ascending, transverse, and descending colon and the sigmoid flexure being well filled with scybalous masses. No enlargement of the mesenteric or retro-peritoneal glands was noted.

Kidneys (right).—Capsule slightly adherent and cortex slightly lobulated. On section the latter showed some thinning, but no evidence of fatty change. The pyramids and calyces were apparently normal.

The left kidney, ovaries, bladder, and uterus showed no pathological changes.

Owing to the permission to make a limited autopsy only, the heart and lungs were not examined.

(In performing the autopsy an omission was made in not dissecting out the celiac axis, which seemed apparently normal *in situ.* Interesting pathological changes have been found in some cases of pancreatic disease.)

As the affections of the pancreas are among the rarer diseases which come under the notice of the physician, it might be admissible to refresh our memories with a sketch of their history. Hippocrates ("Encyclopedia of Anatomy and Physiology") does not mention the pancreas, and it is not until the seventeenth century that diseases of this organ attracted attention. Only within the last few years have its diseases been much studied.

Dr. W. P. Herringham, in his paper on "Primary Cancer of the Pancreas," published in 1894, writes: "It is still true that it has met with very little attention at the hands of medical writers. Even in as late a work as Fagge's 'Practice of Medicine' no mention is made of diseases of this organ, while Friedreich's article on 'Acute Pancreatitis,' in Ziemssen's 'Encyclopedia,' has but four cases for its foundation. In the classic book of 'Classes of Cologne,' published in 1842, we find enumerated 322 cases of diseases of the pancreas in general; in 1876 Fitz's attention was directed to the subject, and his monograph on acute pancreatitis, in which he had collected fifty-four cases, was published in 1889. His investigations gave the impetus to the study of its diseases in this country."

Dr. J. M. Da Costa, who wrote in 1860 that "many of the later physicians have taken the ground that cancer does not affect this gland," has himself reported a case since of primary cancer of the pancreas, with a paper published in the *Proceedings of the Pathological Society of Philadelphia* (1860), in which thirty-seven cases are enumerated.

Since 1882 papers published in *St. Bartholomew's Hospital Reports* (1882–94), as well as later works on general medicine, such as Osler, Tyson, and Leo, prove beyond a doubt that cancer is the most common of its chronic diseases, being generally primary in origin. Walshe states that "when continuous in substance, with carcinomatous productions in adjoining situations, pancreatic cancer is, as far as I can discover, almost invariably primary."

Besides inflammation and carcinoma, the pancreas is subject to atrophy, sclerosis, hemorrhagic infarcts (apoplexy, of Leo), suppuration, gangrene, abscesses, calculi, and cysts; round worms have been discovered in two cases filling up its duct. In one case reported this accidental entrance into and consequent plugging up of the tube was considered the cause of abscess (reported by Dr. John Shea). Leo suggests that the entrance of the worm was effected post-mortem.

Disseminated fat necrosis is reported by Dr. Thayer, in a case of "Acute Pancreatitis with Abscess;" this condition having also been noted by him in nearly half the cases of hemorrhagic and gangrenous pancreatitis. The necrosed tissue consisted of a combination of lime and fatty acids. When present, this pathological process extends to the mesentery, omentum, and surrounding tissues. It is less commonly seen in the suppurative forms. Osler ("Practice of Medicine," p. 459), in noting this condition, writes: "In the pancreas the lobules are seen to be separated by a dead white necrotic tissue, which gives a remarkable appearance to the section."

Etiology and Diagnosis.—According to Walshe the etiology of cancer of the pancreas is wrapped in obscurity; heredity, age, and sex playing the most important parts in the causation of this disease. Thus, in *St. Bartholomew's Hospital Reports*, of 39 cases, 25 were males and 14 females; in Da Costa's, 37 cases, 22 were males and 15 females; in Walshe's, 40 cases, 19 were males and 21 females; in Claessen's, 322 cases, 193 were males and 129 females; in Herringham's, 56 cases, 41 were males and 15 females. Of these cases three occurred between the ages of 20 to 30 years; four between 30 and 40 years; five between 40 and 50 years, and twenty-eight over 50 years. Herringham mentions a case occurring in a little girl 2 years of age.

Next in obscurity comes the symptomatology and differential diagnosis, and in attempting to establish the latter two main difficulties present themselves: (1) The symptoms are often those arising from contiguous organs, mainly the stomach and liver; and (2) the deep and hidden position of the pancreas renders the eliciting of physical signs almost impossible, and its different affections often present many symptoms in common. Ovarian cysts, obstruction of the bowels from ileus or fecal impaction, gall-stones, hepatic abscess, cancer of the pylorus, tubercular peritonitis have all been mistaken for this disease, and so obscure are the symptoms and physical signs that, in many cases, a probable diagnosis is all that can be expected.

According to Da Costa (read before the Pathological Society of Philadelphia), "the main symptoms of pancreatic cancer are a tumor in the epigastric region, pain in that location or in the back, constipation, progressive emaciation and debility; obstinate jaundice and oc-

casional vomiting as the disease advances. The diagnosis is possible, if these symptoms be present, and provided we are able to exclude with certainty diseases of the stomach and liver. Duration is an important factor in diagnosis, cancerous affections being more gradual in their course."

To show the great similarity of the symptoms in the case mentioned in the beginning of this paper to those of acute suppurative pancreatitis, the reader has simply to refer to the tables of symptoms in Dr. H. D. Fitz's work on "Acute Pancreatitis," the duration being apparently the single diagnostic point ante-mortem. In the case reported above, the suddenness of the attack, the fever, and the absence of tumor in the beginning pointed to acute pancreatitis. The presence of deep-seated epigastric pain with progressive emaciation, the development of cachexia with fatty stools, the absence of gall-bladder distention and of pyloric tumor, did much to aid in arriving at a correct conclusion.

The appearance of fatty matters in the stools has been considered an important factor in diseases of the pancreas; Susana and Night considered this as one of the most reliable signs, while such able men as Walshe, Bennet, Leo, and Da Costa do not give any weight to the symptom. It has been shown that it may exist where there is no disease of the pancreas, and, on the other hand, it is often absent in disease of this organ. Walshe states that fat is found in the feces only when the liver is seriously implicated, and Leo writes that in 335 cases collected by Amelot it was observed only twenty-eight times; the former also states that while the impeded absorption of fat is of little significance "in a diagnostic sense," yet its presence in the stools supplies us with the only fact which points with certainty to the absence of pancreatic juice from intestinal digestion. Normally 84.3 per cent., on the average, of the fat contained in the feces is split up and appears no longer under the form of neutral fats, but as fatty acids or of soap, and this takes place when from obstruction no bile is flowing into the bowels. In pancreatic disease preventing the flow of pancreatic secretion the average amount is given as 39.8 per cent.

Pressure symptoms, although apparently not present in this case, may develop during the course of the disease, and give rise to serious complications. The intense pain present may have resulted in part from pressure upon the celiac axis, while gastric dilatation, ascites, anasarca, aneurism, and hydronephrosis have been reported in some cases from pressure of the growth upon the pylorus, vena porta, vena cava, aorta, or ureters respectively.

MALPOSITIONS OF THE UTERUS AND THEIR TREATMENT.[1]

By William E. Parke, M.D.,

PHILADELPHIA.

In order to appreciate the malpositions of the uterus it is necessary to understand its normal position and relation. The womb is situated in the floor of the abdominal or pelvic cavity, having in front of it the bladder and behind it the rectum. Its relation with adjacent viscera and bony pelvic walls is maintained by four pairs of ligaments, which, however, do not hold the organ in a fixed position. Thus a full bladder and an empty bowel have a tendency to push it backward, and the reverse condition crowds it forward. It may be observed during manual examination that the organ can be pushed an inch or more into the abdominal cavity as well as drawn down towards the vaginal outlet. Its lateral movement is relatively more limited than the forward and backward and up-and-down movements. It will thus be seen that there is considerable latitude of movement in the normal relations of the organ. In a woman, in the erect posture, its anterior face looks downward and forward, while its posterior face looks upward and backward, towards the abdominal cavity, and its canal forms with the vaginal canal approximately a right angle. The mobility of the organ, the origin and insertion of the ligaments are on the same level, and the standing posture, shows that the ligaments act in the capacity of guy-ropes rather than supports to the uterus.

The faulty positions of the uterus which demand treatment are anteflexion, retroversion, retroflexion, and prolapse, and are for the most part secondary to other lesions.

The condition of anteflexion is the normal position of the uterus, and is maintained by the utero-sacral ligaments holding the cervix back and up, while the force of intra-abdominal pressure is brought to bear upon the posterior aspect of the organ. This condition does not require treatment, except the flexion be so sharp as to obstruct drainage, on the one hand, or to prevent conception, on the other. When this condition obtains it is the result of imperfect development.

Its treatment is dilatation and curettement and at times amputation of the long, pointed cervix. Pessaries have no place in the management of this form of displacement.

Retroversion and retroflexion are due to like causes. The form

[1] Read before the Northern Medical Society.

of displacement is determined by the condition of the uterus itself. If the organ be hard and stiff from a chronic inflammation, then it turns over without flexing and becomes a retroversion. If, on the other hand, it is soft and flexible, then the fundus will bend over without influencing the cervix to any great degree, and the condition will be that of retroflexion. It is said to occur congenitally. It is not infrequently found in nulliparous women. Women who have borne children are, however, by odds the most frequent victims of this form of displacement, and it is easy to understand why this should be so. After parturition the uterus itself is larger and heavier and more flexible than normal. The ligaments and vagina and perineum which give it support are relaxed. The abdominal wall itself—which normally serves by its tonicity to keep the enclosed viscera from sagging down, just as the rigid sides of the inverted glass tube prevents the water from running out—is relaxed, and thus in a measure has lost its retentive power, so that the increased weight of the womb with the decreased resistance of its support favors its descent and greater latitude of movement. When the fundus of the uterus is brought behind its transverse axis, then the powerful and persistent force of intra-abdominal pressure is brought to bear on the anterior face of the womb, which not only keeps it retrodisplaced, but tends to aggravate the condition.

A distended bladder and bowel may operate to cause a displacement,—the former by pushing the fundus backward, and the latter by pushing the cervix forward. A sudden strain or jolt under these circumstances will sometimes cause the womb to be thrown over backward.

Inflammatory exudates, such as are caused by diseased tubes, often draw the uterus back and fasten it.

All retrodisplaced uteri are more or less prolapsed, but this is often trifling in amount. When, in addition to the backward displacement, there is injury to the fascia and muscular tissue of the pelvic floor, then the uterus sags down, giving rise to the condition known as prolapsus uteri, which varies in degree from a slight descent to complete extrusion of the organ from the body. This condition is usually found in parous women, but it is sometimes seen in women of relaxed fibre who have not borne children. Intra-abdominal tumors usually increase prolapse.

The treatment of these conditions—*i.e.*, retroversion, retroflexion, and prolapse—is practically included in the use of tampons, pessaries, or some form of operation.

If the uterus be restored to its normal position and medicated tampons be introduced, great temporary relief will be afforded, and at

times a permanent cure will result. This latter result is only to be expected when the malposition is due to relaxation or hypertrophy rather than to positive laceration of the tissues. Considerable temporary relief will also be given to the subjects of prolapse by the use of tampons, which do good by their mechanical support. This, however, is to be considered only palliative. Tampons do good also by their derivative action upon the congested and hypertrophied vaginal walls and probably deeper structures, and in this way bring about a more healthy condition of the parts.

The vaginal pessary is an instrument designed to maintain the uterus in its normal position, and is of no use until the uterus can be so placed. There are therefore contraindications to the use of the pessary. These are tubal disease, inflammation of the ovary, and pelvic peritonitis. When tubal disease and adhesions are present, these are by far the most important conditions to be dealt with, and the cure of the associated displacement becomes an incident in the treatment of the more important tubal disease. When the ovaries alone are inflamed and tender, or there is simply tenderness in the vault of the vagina and the uterus is replaceable, there should be a preliminary treatment by tampons until the soreness is removed. Then a pessary may be used. Indeed, it is very commonly necessary to use the tampon treatment in order to reduce the congestion incident to the backward displacement before the pessary can be well borne. The pessary, of course, is not intended to keep the uterus in place by pressure on it, but by upward pressure on the posterior wall of the vagina and utero-sacral ligaments. The forms of pessaries best adapted to this purpose are those which present to the lateral view a shape somewhat resembling the letter S. Those in common use are the Hodge, the Smith, and the Thomas pessary. They should, when adjusted, fit snugly in the vagina without making undue pressure on its walls.

The class of cases in which pessaries do good are the replaceable retroversions and retroflexions, where there is neither tubal disease nor tender ovaries. The perineum should, of course, be intact to furnish proper support to the pessary, otherwise it will either slip out altogether or fail to do its work. Of the whole number of cases which are suitable for treatment with the pessary, we will be able to cure by this means from 10 to 15 per cent., and of that class of retrodisplacements which are of recent puerperal origin, 20 to 30 per cent. will be cured. It will thus appear that the number of cures to be expected from the use of the pessary in unmarried or nulliparous women is relatively small. The remaining 70 to 85 per cent. will require the continued use of the pessary, and consequently the constant service of a physician,—or some operation for their cure. I have not referred to the stem pessaries and will only mention them to condemn them.

The management of prolapse of the uterus comes more into the realm of surgery than simple retrodisplacement, and yet there is a limited field for the use of the tampon and pessary in this condition. In those cases where the cervix is much elongated, even protruding, and the vaginal tissues congested and hypertrophied, improvement may be secured by putting the patient to bed and using tampons. This not only makes the patient more comfortable, but is valuable preparatory treatment for an operation. If such a patient has a fairly good perineum the cotton packing will be retained, and furnish good support to the uterus. A rubber ring will furnish some support, but may cause ulceration from pressure, if used continuously. The objection to the cotton packing is that the patient must be constantly under the physician's care. If the perineum be completely torn, neither rings nor cotton will be retained. There are women also with this condition in whom operation is contraindicated, by reason of age or other cause. For such cases the cup and stem pessary has been devised. My experience with this formidable apparatus is very limited. The use of the colpeurynter in these cases appeals to me as being much less objectionable.

All cases of retrodisplacement which have not been cured by three to six months' continuous treatment by the tampon and pessary should be offered the advantages of an operation. There are, to be sure, many cases in which immediate operation should be advised. Such are those due to lacerations, etc.

When operative treatment is decided upon we have to select the method. There have been devised a number of methods of operating for the cure of retrodisplacement. These operations have for their object the bringing forward of the fundus of the uterus and the keeping it forward. Of these numerous methods two only have succeeded in getting a somewhat universal usage. These are the so-called ventrofixation, or ventrosuspension, and shortening of the round ligaments. Other ingenious procedures have been devised and adopted by individual operators, here and there, but the ones mentioned hold the field against all others.

The round ligament operation has a somewhat more limited field than that of ventrofixation. It is only indicated when the uterus is freely movable and not too large and heavy. Adhesion of the pelvic organs is a positive contraindication to its employment. Its advantages are that it can be performed without opening the abdominal cavity, and, when done, the uterus is maintained in the normal relations by its natural supports. Ventrofixation has a much wider application. It includes not only those cases for which the round-ligament operation may be done, but also all those in which the abdomen has

been opened for any cause, such as operation on the appendages, and the breaking up of adhesions. The diseased parts can be removed and the uterus stitched to the abdominal wall. In a few instances obstetrical complications have followed this operation. These appear, however, to be preventable by adopting a proper technique in its performance, and not to be inherent in the operation. From the gynecological point of view it is entirely satisfactory.

In the selection of cases the round-ligament operation should be chosen for women in the childbearing period, whenever it is not contraindicated by reason of other pelvic disease, and the operation of ventrofixation or ventrosuspension when the abdomen has been opened for other cause.

It is, of course, important in the event of either operation to repair any lesions in the pelvic floor in order to furnish the underneath support.

MEMORANDUM.

MAGGOTS IN AN ADULT HUMAN EAR.

I DO not recall of ever having read of a large number of maggots being found in a human ear. On two occasions I found a few in children who had suppurating otitis media, and who were not of the most cleanly type of humanity, but in this instance I found them in a man of cleanly, careful habits. The case is as follows:

Mr. H., a retired farmer, aged 70 years, on August 6, called at my office for relief from a gnawing, burning pain. He said he had had no sleep for two nights. For three days there had been a watery discharge from the ear.

On examining the auditory meatus, I found the canal filled with maggots, which were pretty well developed, measuring three-eighths of an inch in length; all were of about the same size, and, therefore, from the same deposit of eggs.

The removal was accomplished by picking them out with a dressing forceps and ear spoon, which was necessarily very slow, for they all were prone to lodge in the farthest part of the canal. After having removed fifty-seven I quit, and dusted the ear with iodoform, expecting to destroy any that might have happened to escape my sight. Next day, on removing the iodoform dressing, I found one dead maggot, making a total of fifty-eight. The number was so large that I thought the case of sufficient interest to warrant this report. Had this

man been in one of our military hospitals or on the Cuban battle-field the occurrence would have been less surprising.

One to 250 corrosive sublimate solution did not destroy the maggots; they would swim in it for an hour, and on removing them, they were as active as when put in.

Hydrozone, 50 per cent., did not destroy life, and only when dusted with iodoform were the maggots rendered inactive and finally killed.

A. T. Walker, M.D.

Collumsville, Pa.

ALUMNI NOTES.

Improvements to the Campus.

During the summer the work of improving the campus surrounding the buildings has progressed rapidly, and many sections of the ground have been beautified. Pine Street, which was deeded to the University last year, has been closed to the public, and from now on will be devoted to the uses of the students. It will be known as "Osgood Lane," so it is said, and will no doubt become a popular resort. Trees, plants, shrubbery, and flowers of all kinds and descriptions have been planted throughout the lane; the fences separating it from the old athletic field and the botanical gardens have been removed, and all the grounds thrown open. Drives and walks have been laid out through the gardens, and an artificial lake has been constructed, giving to this section of the campus a most picturesque appearance. Settees and benches are scattered throughout the lane and gardens. At the western entrance to the lane a memorial gate is now being built. It is the gift of the Class of '73 (College).

A number of small buildings have been erected in the vicinity of Biological Hall, during the summer, for the use of the Botanical School. A very large extension is also being made to the Nurses' Home, at Thirty-fourth and Spruce Streets, adjoining the hospital. The group of buildings for the Archeological and Paleontological Museums, which have been in course of erection seven months or more, are nearing completion. The plot of ground at Thirty-fourth and Chestnut Streets has been cleared for the early erection of the new building for the Law School. The formal dedication of the new Dental Hall will take place early in the coming session.

Naming the Dormitories.

When the present houses in the dormitory system were erected, it was the intention of the authorities to permit those who had contributed at least $5000 each towards the building fund to name the houses. This plan has been partly carried out, and nine of the houses have received the names by which they are to be known hereafter. They are "Francis Hopkinson," "John Baird," "Wilson D. Craig," "Class of '87," "Baldwin," "McKean," "Franklin," "Joseph Leidy," and "Phillips Brooks." This does away with the system of letters formerly in vogue in designating the houses, and the new arrangement will be much more satisfactory.

New Buildings for Fraternities.

Unusual activity has been shown by some of the fraternity organizations during the summer in the way of material acquisition. The Psi Upsilon Fraternity, which owns the property at Thirty-sixth and Locust Streets and Woodland Avenue, has begun the erection of a costly chapter house, which will be ready for occupancy about the close of the session. Phi Delta Theta has also started preliminary work for the erection of a chapter house at Thirty-fourth and Walnut Streets and Woodland Avenue. The Beta Theta Pi Fraternity has moved into its new chapter house on Locust Street, below Thirty-sixth.

Dr. Eugene P. Bernardy, Class of '68, has had conferred upon him the order of palms by the French Academy. This act makes him an officer of the Academy. Dr. Bernardy has been physician to the Société Française Bienfaisance of Philadelphia since 1869.

Ichthyol in Pulmonary Tuberculosis.

Dr. Branthorme recommends an alcoholic solution of ichthyol (one part of ichthyol to two of alcohol), thirty drops in water, several times a day. The dose is increased daily by two drops till it reaches 150 drops per day. Ichthyol is not only not injurious to the stomach, but even beneficial in cases of atonic dyspepsia. It is administered to patients in whom creosote is contraindicated. While the latter exerts its principal effect on local symptoms, the action of ichthyol is said to influence the whole organism. It is not only antibacillary in its effect, but, like arsenic, it exerts an effect on the digestive apparatus and on nutrition. It is probably best used when alternated with creosote.—*Boston Medical and Surgical Journal.*

EDITORIAL.

THE SURGICAL OCCLUSION OF THE CEREBRAL SINUSES.

One of the most troublesome problems in cerebral surgery at the present time is how best to arrest hemorrhage from the cerebral sinuses. Heretofore operations have been of necessity so planned as to avoid these venous channels, and while they are not quite so carefully respected at the present time, still, surgeons, without exception, to-day contemplate wounds of these vessels with the greatest apprehension. In the *Annals of Surgery* for August, Dr. R. T. Stratton has contributed a valuable article under the above heading.

The structure of the cerebral sinuses is totally different from that of the veins found in the other portions of the body, and the methods of controlling bleeding from the latter are applicable in the case of the former under greatly modified circumstances only. In certain examples of accidental injury of these sinuses bleeding may be satisfactorily arrested by the proper application of a tampon of gauze. But in other instances, and particularly in the cases in which it becomes necessary to divide the sinus in the course of an operation, this means is not available.

The difficulties that attend the application of a ligature to the sinuses of the brain, particularly the longitudinal and lateral sinuses, which especially concern the surgeon in this connection, are, first, the undesirability or impossibility of removing safely a sufficiently large area of the overlying skull to give free access to the sinus; second, the determination of the exact limits of the sinus; and, third, the danger of lacerating the wall of the sinus when the ligature is drawn taut or of injurious compression of the brain if the sinus or dura does not tear.

The first of these difficulties is not insuperable, but in such a case, for example, as compound fracture of the skull with injury of the sinus, the amount of time required to remove the necessary area of bone might permit of serious or fatal hemorrhage. The second is one of great importance. If the needle carrying the ligature should penetrate the wall of the sinus, hemorrhage would, of course, result, while if an undue amount of dura be included the third danger becomes much greater. Stratton has shown, by experiment on the cadaver,

that ligature of the longitudinal sinus caused marked tension of the dura, and what would appear to be an injurious amount of pressure on the brain. The author describes a case in which one and one-quarter inches of the longitudinal sinus were excised for fibrosarcoma, involving the sinus as well as the dura and adjacent falx. To this he has added some experimental and theoretical considerations. In the case reported there was marked adynamia from the first, and this condition became gradually more profound, death occurring on the twelfth day after operation. In an effort to devise, if possible, a mode of procedure which might lead in similar cases to a successful termination, the author particularly considers the causes of the failure of the establishment of the collateral circulation in the case reported. Among these factors he notes:

(1) The sudden stopping of the flow of blood through the sinus and the large vein entering it opposite the tumor. Inasmuch as the lumen of the sinus was already largely occluded by the neoplasm, the collateral circulation had been nearly established, and largely through the vein. Before anastomotic channels could become large enough to permit sufficient flow of blood, clotting probably took place in the distal portion of the sinus.

(2) The low degree of blood-pressure in the cerebral vessels resulting from the excessive hemorrhage during the performance of the operation.

(3) The shock from the operation and the prolonged administration of the anesthetic producing feeble cardiac action and dilatation of the peripheral vessels with consequently further reduction of blood-pressure and increase of tendency to blood stasis.

The impression seems to prevail that a permanent disturbance of the circulation, as the result of the occlusion of a cerebral sinus, is not a result to be greatly feared. Evidently the experience of Kammerer, in whose case there was such a result and a fatal termination, has been overlooked. But the revelation of the necropsy in the case here reported should forcibly impress the fact that the occlusion of a large cerebral sinus is not a matter to be lightly undertaken, and only with every precaution to maintain the continuous and forcible flow of blood through the unoccluded portions of the sinus and its anastomosing veins.

It emphasizes also the value of suturing wounds of the sinuses, when practicable, in order to stop a hemorrhage in preference to methods involving occlusion, and thereby avoiding the dangers which might follow the latter procedure in the condition of shock, which generally accompanies cerebral traumatism.

To prevent the failure of the establishment of the collateral circu-

lation, it is strongly urged that the following precautions be taken in deliberate operations for lesions, the symptoms of which suggest the possibility of requiring destruction of a cerebral sinus:

(1) Prevent excessive loss of blood by the application of the tourniquet firmly to the scalp and prompt occlusion of bleeding points on its removal; also by rapid bone-section and tamponment of the resulting sulcus. Starr states that the method of preventing hemorrhage by the application of the tourniquet to the scalp is a failure, but Stratton's experience has taught him its great value, at least, in certain cases. If much oozing of blood occurs upon incising the dura, rapidly complete the necessary incisions by the assistance of a delicately grooved director and apply tampons. Avoid puncturing the pial vessels.

(2) The bone and scalp flaps having been raised and hemorrhage stopped, conclude the operation at this stage according to the method advised by Park, in operations on the brain in which there is danger of shock, by inserting between the edges of the scalp a layer of gauze to which an antiseptic ointment has been applied. In a week or two, when the effects of this stage of the operation have passed off, conclude the second stage.

If, however, the circulation of the patient lacks vigor, or if for any reason there is doubt as to the second stage being concluded without shock, in addition to the above make dural incisions necessary, to permit the proper application of ligatures or clamps, apply these and partly close the lumen of the sinus with a view of performing gradual occlusion. This is to be effected by partially tightening the ligatures or closing the clamps about every second day, until, in the course of one or two weeks, the sinus is entirely occluded, and thus, by the time the patient's condition warrants the concluding part of the operation being performed, the collateral circulation will have been already established and the possibility of blood stasis and thrombosis reduced to a minimum.

The same circulatory conditions, which would cause the method of gradual occlusion to be adopted as a part of the preliminary stage, should induce its being followed in the secondary operation, should shock supervene at any time during its performance or should pial veins, taking an important part in the anastomotic circulation, be accidentally injured or destroyed by the necessities of the operation.

This would cause the concluding steps of the operation to be still further delayed; but, however undesirable, and although attended with increased risks of sepsis, it would appear, under the circumstance named, to be strongly indicated.

(3) During the performance of the final stage of the operation

and after occlusion of the sinus, should extensive hemorrhage occur, or should there be any tendency for the pulse to become soft, small, or feeble, maintain a proper degree of blood-pressure by having an assistant perform at once intravenous saline transfusion, a vein having been previously exposed, should the necessity of this seem at all probable. Or Esmarch's bandages may be applied to the extremities, or the two procedures may be conjoined.

Further than this, prevent any tendency to shock by proper stimulation with alcohol, strychnine, etc., by operating rapidly, and having all contingencies provided for, and allowing only the least possible amount of anesthetic to be administered.

(4) Avoid especially injury to the veins of the pia mater, through which the blood-current is to be maintained after occlusion of the sinus is effected. This includes not only laceration or puncture, which would require ligation, but also all those procedures which tend to maintain the vitality of the parts locally and prevent hernia cerebri. Among these factors can be mentioned rigid aseptic technique, the avoidance of traumatism, and osteoplastic or heteroplastic operation on the skull. It can readily be seen that even a slight protrusion of the cortex beyond the level of the internal surface of the skull would occlude the lumen of any vein traversing its surface by compressing it against the border of the bone-opening. Also the long-continued vomiting, as occurred in the case narrated, and possibly even the cerebral pulsation which results from removal of the firm, bony support to the brain, will, if the dura has been extensively incised, produce such a degree of traumatism of the delicate cortical substance as to induce not only a local cerebritis, but even softening and disorganization. A vein traversing such an area would be destroyed, even if hernia cerebri did not cause its occlusion.

(5) During and after the operation have the posture of the patient such as will maintain a proper degree of pressure within the cerebral blood-vessels, and facilitate the flow of blood through the sinus and the vessels concerned in the anastomotic circulation. The head should be on a level with the body and the face directed upward.

(6) If vomiting continues for any considerable period subsequent to the operation, administer salt solution per rectum, and thus assist in maintaining the fluidity and proper degree of pressure of the blood.

The importance of this subject warrants further investigation along the lines indicated in Dr. Stratton's paper.

MEDICAL PROGRESS.

MEDICINE.

UNDER THE CHARGE OF

JAMES TYSON, M.D.,

ASSISTED BY

M. HOWARD FUSSELL, M.D., AND A. O. J. KELLY, M.D.

Quinine Hemoglobinuria.

Murri (*Archivios Italian di Biologie*, Tome xxviii, fasc. iii, 1897; *British Medical Journal*, August 27, 1898) reports a case of this affection. A girl, aged 17 years, contracted tertian ague in July, 1897. In spite of treatment she was not cured in January, 1898, and was still taking quinine. At that time she had an attack of ictero-hemoglobinuric fever directly after taking quinine, and subsequently whenever quinine was taken such an attack was observed, consisting in rigors, vomiting, followed by smoky urine, and, lastly, jaundice. The spleen became larger and firmer, and sometimes the liver enlarged also, with hypochondriac pain. At the beginning of an attack there was simple polyuria, then from being acid the reaction became alkaline, and, lastly, peptone, serum albumin, globulin, hemoglobulin, and urobilin, hyaline casts, epithelial renal cells, and leucocytes appeared, but no red corpuscles or bile pigments. After an attack all the above disappeared, the serum albumin and peptone last. An examination of the blood showed there was a diminution of the number of red corpuscles, but the malarial parasite could never be found. In spite of this effect of quinine it had its usual influence in prolonging the interval between the attacks of true malaria. The author gives reasons for believing that quinine hemoglobinuria occurs only in those whose organs have been altered by malaria, quinine alone being insufficient to produce it. (1) For twenty years he has been trying to produce quinine hemoglobinuria in animals without success. (2) In a healthy man seventy-five or even 300 grains of quinine produce no hemoglobinuria, while in this girl, after malaria, 1.54 grains did with absolute certainty. (3) No case of quinine hemoglobinuria has been reported which was not complicated by malaria. (4) The proof that one has not to do with an idiosyncrasy in a person with whom malaria is a coincidence is furnished by the fact that quinine intoxication appears in most cases, sometimes after a good many doses have had to be taken,—that is, after the malarial poison has had time to act on the organism,—but not before. (5) It is not produced by an intolerance gradually set up by repeated doses of quinine, for large and repeated doses are often given in non-malarial diseases, and yet not a single case of quinine hemoglobinuria has been reported in these. (6) This hemoglobinuria is almost unknown in Europe, except in Sicily and Greece, and becomes relatively frequent in extra-European countries, where malaria is more virulent. (7) The author's patient had three ictero-hemoglobinuric

attacks after the malaria was cured, and without any quinine having been given. This shows that the hemoglobinuric mechanism had become so easily set in motion that its usually specific stimulus (quinine) could be replaced by others, though exactly what these were could not be discovered. It seemed as though the biological change left in the patient by malaria would not be permanent, for some months after the patient had been cured of her malaria and had had no quinine attacks, a little over one and a half grains of quinine, given experimentally, had very little effect, and even seven and three-quarters grains, though causing intoxication (fever, albuminuria, peptonuria, and urobilinuria), produced no hemoglobinuria.

Post-Typhoid Paralyses.

Jean Foix (*Thèse de Paris*, 1898; *British Medical Journal*, September 3, 1898) publishes a careful study of this affection, with an analysis of four cases. He states that paralysis may supervene in typhoid fever either during the invasion, the height of the disease, or convalescence, the latter being by far the most frequent; there may be an extended interval of apparent health between the primary disease and the paralysis. The author classifies the forms which the paralysis may take in the following order of frequency: Paraplegic, hemiplegic, aphasic (chiefly in children), monoplegic, and affecting a single nerve, more particularly the median. The sensory disorders, subjective and objective, run *pari passu* with the motor; the sensibility of the affected part is always diminished and sometimes lost. The sphincters are now and then involved. Muscular atrophy is a constant symptom in peripheral neuritis of typhoid origin; it progresses with the paralysis and is often incurable. In the central forms edematous infiltration of the cord may be found, and also of the spinal meninges; in the peripheral forms the paralysis is due to parenchymatous neuritis. The actual cause is undoubtedly the toxins produced by Eberth's bacillus, although the germ itself has occasionally been found in the nerves, and may hence play a more direct part. The paraplegic form is of two kinds, due respectively to affection of the cord and the peripheral nerves. With regard to treatment, Foix believes solely in the systematic and methodical application of the galvanic and faradic currents. By this means he claims to stop, if not to cure, the muscular atrophy. He gives a fairly comprehensive bibliography.

Cardiac Palpitation during Childhood.

L. d'Astros (*Annales de Médecine et Chirurgie infantile*, No. 12, 1898). In contradistinction to adults, in whom extracardiac causes frequently give rise to palpitation of the heart, in children it is often latent or semilatent affections of the heart itself, which for years indicate their presence by cardiac palpitation alone. Of these are to be mentioned chronic endocarditis, mitral stenosis, etc. In addition to real disorders of the heart, cardiac palpitation in children may be due to gastro-intestinal disturbances (intestinal worms), incipient pulmonary tuberculosis, the commencement of menstruation in young girls from 12 to 15 years of age, chlorosis, at times hysteria, excessive exertion, and masturbation. Only after careful exclusion of all of these causes can the diagnosis be made of nervous palpitation. Therapy is naturally to be directed towards the removal of the cause. Mental and bodily overwork are to be inter-

dicted, and a moderate amount of hydrotherapy employed (not too cold water, nor too long application). In addition to the strict observance of most important hygienic rules, the most efficacious medicaments will be found the bromides,—particularly sodium bromide, seven to fifteen grains, twice daily.

Tachycardia in Tuberculous Patients; its Influence as regards Diagnosis, Prognosis, and Treatment.

Faisans (*Semaine médicale*, July 13, 1898) directs attention to the fact that tuberculous persons, even those presenting no fever, commonly show some increased frequency of the pulse-rate, and asserts that this can be demonstrated in 80 to 90 per cent. of all patients. Even in the others, an occasional increased frequency of the pulse-rate is readily detected. The pulse of tuberculous patients is not only increased in frequency but is also subject to marked variations, in that partaking of food, bodily and mental exertion, coughing, etc., increase the frequency of the pulse much more than would be the case under normal conditions. This increased pulse-rate, associated with marked variations, is a very important indication of tuberculosis. As to the cause of the tachycardia, a plausible supposition is that it depends upon swelling of the tracheo-bronchial lymph-glands. This condition could give rise to both tachycardia and bradycardia, depending upon whether it produced paresis or irritation of the vagus. But this supposition will by no means explain all cases, as the tachycardia is frequently a premonitory symptom. It is thus more likely the result of central irritation engendered by toxins. There occur cases in which tachycardia and marked marasmus develop at a time when there is as yet no demonstrable tuberculous lesion. Of these, one cannot but give a very bad prognosis, as they speedily go on to death. As regards therapeutics, in tuberculous patients with tachycardia, creosote in large doses is positively injurious, as it favors the occurrence of congestive processes. Likewise contraindicated are excitants, such as alcohol, coffee, tea, etc. In certain cases the bromides will be found of service. Of special value are hygienic and dietetic procedures, particularly living in the open air and overfeeding. Care must be exercised in the commencement of a life in the open air, and during this time no excessive bodily exertions may be undertaken, nor may athletics be indulged in. Tuberculous patients with a pulse-rate of 80 to 90 may, after a time, indulge in slow walking, etc. Those with a pulse-rate of 100 or over must remain absolutely quiet while in the open air. Rest does not operate so much to reduce the tachycardia as to restore stability of the pulse-frequence. Absolute rest is especially indicated in tuberculous women during menstruation, as during this time there exists a tendency for the occurrence of tachycardia and hemoptysis. In addition to cessation of bodily exertions, mental exertions must be interdicted. Overfeeding is most important, but the physician must individualize, devoting particular attention to the pulse-rate, which is increased by partaking of food.

Systolic Murmurs during Childhood.

Soltmann (*Jahrbuch für Kinderheilkunde*, Vol. xlviii, Part I, 1898). Accidental, anemic, systolic murmurs are very uncommon during the first three or four years of life. This is thought due to the relatively large size of the aorta and pulmonary artery at this period of life. On the other hand, the

occurrence of such murmurs at puberty results from the increasing preponderance in size of the heart as compared to the vessels, and the latter being under slight pressure in conditions of anemia. The so-called extracardial or cardio-pulmonary murmurs are also, as the result of physiologic reasons, uncommon during early life. They develop later, are loud, usually systolic, discontinuous, and dependent upon the force of the respiration. The endocardial systolic murmurs of childhood are also influenced by the development of the heart. To this latter is also due the fact that increase of the cardiac dulness to the right and accentuation of the pulmonary second sound are commonly absent in cases of mitral incompetency, the diagnosis having to be made from the constant, unvarying systolic murmur at the apex, and the heaving character of the apex itself. The myocarditic systolic murmurs, which unfortunately so frequently accompany degeneration of the myocardium after scarlatina, typhoid fever, and particularly diphtheria, vary much in character. They are usually more intense at the base than at the apex, and are early accompanied by an increase in the area of cardiac dulness and accentuation of the pulmonary second sound.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

ASSISTED BY

CHARLES H. FRAZIER, M.D.

Operation for Hour-Glass Contraction of the Stomach.

Cheyne (*Lancet*, London, March, 1898) reports the following case: A married woman, aged 46 years, came under his observation in November. Six weeks previously she began to suffer with great pain in the hypochondriac region and in the right shoulder. She presented the usual symptoms of ulcer of the stomach, but she had had no hematemesis. She received the usual treatment for gastric ulcer. Finally, symptoms of obstruction developed. She became emaciated and feeble and vomited almost daily. Examination showed a moderate irregular gastric distention. On auscultating over the middle of the stomach a gurgling could be heard, as if fluid was passing through a narrow orifice. Dr. Yeo, who saw the patient in consultation, diagnosticated hour-glass contraction, the result of an old ulcer. Operation December 1. Four-inch median incision. The stomach was drawn out of the wound. It showed a marked hour-glass contraction. Both the cardiac and pyloric ends were dilated. The contraction was very marked, a crow's quill could scarcely have been passed. There was considerable cicatricial tissue in the neighborhood, and at the point of contraction there was no mucous membrane at all. An incision was made through the contracted portion in the line of the long axis of the stomach, and was continued one and a half inches in healthy tissue on either side. The wound was then united transversely, first by sutures passing through all the coats of the stomach, and, finally, by a row of Lembert sutures.

The operation was identical with that usually known as pyloroplasty for contraction of the pylorus. After the completion of the operation the opening would readily take two fingers.

Convalescence was rapid and uneventful. At the end of two weeks solid food was allowed. Beyond some flatulence the patient's condition seems perfectly normal.

It is comparatively rare that hour-glass contraction of the stomach is recognized during life. In this case the absence of marked dilatation of the stomach and the bubbling of fluid heard at the middle of the stomach pointed to this condition rather than to pyloric obstruction.

Three and a half months after the operation the patient remained perfectly well. This seems to justify the selection of the operation made by the author. Excision of the contracted portion of the stomach was considered, but the feeble condition of the patient did not seem to justify such a serious procedure.

THE MODERN TREATMENT OF GUNSHOT WOUNDS IN MILITARY PRACTICE.

SENN has contributed a very valuable article on this subject (*Journal of the American Medical Association*, July 9, 1898). A number of important points are brought out.

In the matter of arresting hemorrhage by the method of circular constriction, it is laid down that it is necessary to constrict quickly and with sufficient firmness to interrupt at once and completely both the arterial and venous circulations. In probing for bullets it is very wisely recommended to use a probe, the end of which corresponds approximately in size to the calibre of the tubular wound. In speaking of wounds of the abdomen, it is stated that a penetrating wound should never be probed either for diagnostic or therapeutic purposes.

Senn formulates the following conclusions:

(1) In theory and practice military surgery is equivalent in every respect to emergency practice in civil life.

(2) The wounded soldier is entitled to the same degree of immunity against infection as persons in civil life suffering from similar injuries.

(3) The fate of the wounded rests in the hands of the one who applies the first dressing.

(4) The first dressing should be as simple as possible, including an antiseptic powder, composed of boracic acid, four parts, salicylic acid, one part, a small compress of cotton, safety pins, and a piece of gauze forty inches square.

(5) Any attempt to disinfect a wound on the battle-field is impracticable.

(6) The first dressing stations and the field hospitals are the legitimate places where the work of the hospital corps and company bearers is to be revised and supplemented. All formal operations must be performed in the field hospitals where the wounded can receive the full benefits of aseptic and antiseptic precautions.

(7) Probing for bullets on the battle-field must be absolutely prohibited.

(8) Elastic constriction for the arrest of hemorrhage must not be continued for more than four to six hours for fear of causing gangrene.

(9) The X-ray will prove a more valuable diagnostic resource than the probe in locating bullets lodged in the body.

(10) Gunshot wounds of the extremities must be treated upon the most conservative plan, the indications for primary amputation being limited to cases in which injury of the soft parts, vessels, and nerves suspend or seriously threaten the nutrition of the limb below the seat of injury.

(11) Operative interference is indicated in all penetrating gunshot wounds of the skull.

(12) Gunshot wounds of the chest should be treated by hermetically sealing the wounds under the strictest aseptic precautions.

(13) Laparotomy in penetrating gunshot wounds of the abdomen is indicated in all cases where life is threatened by hemorrhage of visceral wounds, and the general condition of the patient is such as to sustain the expectation that he will survive the immediate effects of the operation.

Perforative Peritonitis.

At the recent meeting of the American Medical Association there was an extensive discussion on this subject, which was opened by J. C. Wilson (*Journal of the American Medical Association*, July 9, 1898). After a general consideration of the subject the diseases in which acute general peritonitis may arise is enumerated. They do not, of course, include the traumatic and gynecologic cases.

(1) In the alimentary canal: (*a*) peptic ulcer, gastric and duodenal; (*b*) enteric fever; (*c*) appendicitis.

(2) Other hollow viscera, the contents of which may be infected: (*a*) the gall-bladder; (*b*) the pelvis of the kidney; (*c*) the urinary bladder.

(3) Rupture of abscesses: (*a*) purulent pleurisy; (*b*) subphrenic abscess; (*c*) hepatic abscess; (*d*) abscess of the pancreas; (*e*) appendicular abscess, and (*f*) other pus collections in regions in relation with the peritoneum.

(4) Necrotic processes involving abdominal viscera: (*a*) internal strangulation; (*b*) intussusception; (*c*) volvulus; (*d*) embolism and thrombosis of the mesenteric vessels; (*e*) gangrene of the pancreas or of the spleen; (*f*) displaced kidney or spleen with twisted pedicle; (*g*) acute hemorrhagic pancreatitis; (*h*) fat necrosis.

The symptoms in the early stages, when operative interference is advisable and with fair prospect of success, are:

(1) Pain, general, becoming local; or local, becoming general, according to cause.

(2) Tenderness, general, becoming local; or local, becoming general.

(3) Rigidity of the abdominal muscles.

(4) Vomiting, green. Exceptionally absent.

(5) Rise of pulse and temperature. Also exceptionally absent.

(6) Shock, varying in depth.

(7) Diminished peristalsis.

On the other hand, in the presenee of the following symptoms, the author believes surgical interference is of questionable propriety. They indicate a fully developed peritonitis.

(1) Pain lessened or absent.

(2) General tenderness.

(3) Excessive distention, replacing rigidity.

(4) Excessive vomiting, green or fecal.

(5) Obstipation; peristaltic movements not heard.

(6) Rapid and feeble pulse.
(7) High or low temperature.
(8) Lividity of abdominal skin; cold extremities.
(9) Peritoneal facies.
(10) Mind clear.

The hopeless cases present the above symptoms to a more marked degree, to which is added collapse, and the patient is moribund.

In closing the paper, the author formulated the following propositions:

(1) A definite causal or local diagnosis of the lesions can be made in comparatively few instances.

(2) The diagnosis of acute general fulminant peritonitis is of itself sufficient to justify operative interference in proper cases.

(3) The earlier the operation the greater the prospect of success. After twenty-four hours, especially if great distention of the abdomen has shown itself, operation is not likely to be followed by recovery.

(4) A small proportion of the cases are manifestly hopeless from the onset.

(5) Where the patient is not obviously past hope, the fear of death upon the table should not deter the surgeon from operating.

Tracheotomy under local Anesthesia.

Fränkel (*Berliner klinische Wochenschrift*, June 6, 1898) reports twenty-three tracheotomies which he has performed under local cocaine anesthesia during the last three years. Seventeen of the cases were adults. The operation was performed for the following conditions: Laryngeal syphilis, 5 cases; laryngeal tuberculosis, 6 cases; carcinoma of the larynx, 4 cases; pachydermia laryngis, 1 case; stenosis of the larynx resulting from an attempt at suicide, 1 case. In two additional cases the disease was acute. In four cases a small amount of chloroform was given first, then the cocaine was injected, and the operation proceeded with.

Fränkel draws attention to the value of this method in cases of laryngeal stenosis, in which the administration of a general anesthetic would involve the risk of death from suffocation. He injects a 20-per-cent. solution under the skin in two places, or a 10-per-cent. solution in four places, and waits a few moments before beginning the operation. In children he uses a 10-per-cent. solution. In the adult, 0.04 gramme (three-fifths of a grain) of cocaine is employed.

THERAPEUTICS.

UNDER THE CHARGE OF

HORATIO C. WOOD, M.D., LL.D.,

AND

ARTHUR A. STEVENS, M.D.

Calcium Chloride in Hemorrhage.

Hare (*Columbus Medical Journal*, August 29, 1898) calls attention to the value of calcium chloride in the treatment of small, oozing hemorrhages. Dr. Wright, of Netley, England, as is well known, pointed out some years ago

that the use of calcium chloride distinctly increases the coagulability of the blood; but he also pointed out a fact which must not be forgotten,—namely, that after calcium chloride is given in full dose for a number of days a reverse effect is produced, and that delay in coagulation occurs under its influence. The use of the drug, therefore, should not be persisted in for too long a time. During the past winter the writer has had occasion to use calcium chloride in two patients. In one of these, a case of spleno-medullary leucemia, the patient almost bled to death after a necessary minor operation, and, while other means of controlling his hemorrhage were resorted to besides calcium chloride, he feels inclined to believe that the arrest of this hemorrhage was, at least in part, due to this substance. The other patient was suffering from repeated hemorrhages complicating typhoid fever. Here, also, other antihemorrhagic methods were employed, though in any event the early hemorrhages seem to have been controlled by this method; the man ultimately died, however, from a very profuse hemorrhage, and the post-mortem examination revealed the fact that the ulceration in the intestine was so malignant that nothing could have prevented erosion of a number of large vessels.

The Dietetic Treatment of Hyperchlorhydria.

Strauss and Aldor (*Zeitschrift für diätetische und physikalische Therapie*, Band i, Heft 2, S. 117; *British Medical Journal*, August 13, 1898) have made some researches in regard to diet in hyperacidity, due to the excess of free hydrochloric acid. There has been a difference of opinion among authorities upon the question of diet in hyperchlorhydria; some have thought that a diet chiefly nitrogenous was indicated, but, on the other hand, the diet irritates the stomach, and should thus aggravate the disease. Other well-known physicians have even advocated the presence of a considerable amount of carbohydrates in the dietary. Against this view must be placed the fact that a relatively rich deposit of starchy material is found in the stomach obtained after a test-meal given to those suffering from hyperacidity. Strauss and Aldor believe that the problem is to be solved by reducing the amount of carbohydrates, while at the same time providing a sufficiency of substance free from nitrogen. The replacement of ordinary starchy food-stuffs by those in solution will not satisfy the requirements. The damage done to the total metabolism in hyperacidity is well recognized, and is evidenced by the deficient nutrition of such patients. The authors maintain that the desired end may be obtained by introducing an abundant amount of fat into the diet. Strauss undertook a series of experiments upon patients suffering from various stomach affections, by which he was able to show that in the majority of cases the addition of a certain amount of oil to the dietary was followed by a diminution both in the total acidity as well as in the acidity due to free hydrochloric acid. It has been stated that fat impairs the motor functions and absorptive powers of the stomach, but even if this were to some extent correct, the patient is nevertheless thus provided with a quantity of combustible material which is only otherwise supplied with much difficulty. Having thus satisfied themselves on these points, the authors proceeded to test how far it would be possible to substitute fats for carbohydrates, and at the same time to maintain a rational mixture of nitrogenous and non-nitrogenous food-stuffs. They made five investigations in four cases of hyperchlorhydria. The observations extended over five to eight days, during which period abundant fatty matters (125.5 grammes in two and 160

grammes in three investigations) were added to the dietary, and the metabolism was most minutely investigated. The subjective condition of the patients, as well as the functions of the stomach, were also carefully noted. The results show that the utilization of both fatty and nitrogenous matters was extremely good. The patient's weight remained constant or was increased. The use of abundant fatty matters produced no unpleasant effects, for only in one case were there any dyspeptic symptoms, and these were very fleeting. The authors claim to have established the fact that in gastric hyperacidity there is a considerable toleration of fatty matters, and that if it is desired to improve the patient's nutrition fats must occupy a considerable place in the diet sheet. The fat used was obtained from milk, butter, cream, and oil. Cream is especially to be recommended. A portion of the carbohydrates required should be supplied in a state of solution; but, on the other hand, attention is drawn to the fact, proved by Strauss himself, that oatmeal soup very quickly leaves the stomach of those suffering from considerable motor insufficiency, both when the secretion of hydrochloric acid is normal and when it is increased.

Boas (*Gazette hebdomadaire de Médecine et de Chirurgie*, May 15, 1898) recommends the following mixture, suggested by Wolff, for the excessive secretion of hydrochloric acid:

℞ Sodium sulphate . . . . . 30 parts.
Potassium sulphate . . . . . 5 "
Sodium chlorate . . . . . 30 "
Sodium carbonate . . . . . 25 "
Borax . . . . . 10 " M

Sig.—Half a teaspoonful, dissolved in half a glass of warm water, three times a day, before breakfast, and two hours before luncheon and dinner.

Pure Milk-Supply.

Ravenel (*Journal of Comparative Medicine and Veterinary Archives*, April, 1898) says that until 1870 milk was not considered as being capable of carrying epidemic disease, but since that time the evidence that it can carry disease is as overwhelming as it is appalling. The regulations governing a milk-supply must be of the nature which will permit so important a food-supply to be within the reach of the masses. The proper place to begin the care of the milk is unquestionably at the animal which produces it. The cows should have the most careful attention, as to food, housing, veterinary care, etc. The chief sources of the germs are the cow itself, the hands of the milker, and the dust of the stable. On the cow the germs can be gotten rid of by keeping the udder, the belly, and the inside of the legs clipped. When milking is done, the parts should be brushed and then moistened with water. The hands of the milker should be washed in soap and water before milking, and he should wear a linen duster, which could be easily laundered. Dust can best be avoided by having a separate milking shed, but where this is impossible the stable must be kept clean; as soon as the milk is drawn it should be removed from the stable, filtered, and aerated at a low temperature. All vessels should be absolutely clean, boiled, where possible, before using. Because it is practically impossible to keep milk at a low temperature until it reaches the hands of the consumer, he advises Pasteurizing all milk before it is shipped from the farm.

Extract of Ox-Bile in Biliary Lithiasis.

Gautier (*Revue médicale de la Suisse romain*, June 20, 1898) states that he has obtained remarkable results in several cases of biliary colic from the use of an extract of bile. The latter is prepared by first decolorizing the bile to destroy the toxic coloring matter which it contains, and then sterilizing it at a temperature of 104° to 105° C.; 100 grammes of bile thus producing 10 grammes of the extract. One and a half grains to three grains of the extract were given in pill or capsule twice daily, after meals. The treatment may be continued for years, or given periodically, whenever signs of colic appear. The author does not claim that the remedy has any effect upon calculi which have been already formed and which may fill the gall-bladder, but that it serves to prevent the formation of fresh calculi. In a group of cases simulating gastralgia, in which the pain is localized in the epigastrium, and radiates downward and to the back, and reaches its climax rapidly and then gradually disappears, the remedy is of especial value. These attacks may last a day, or recur day by day for weeks, and are accompanied by tenderness in the epigastrium and right hypochondrium, and with considerable tympanites and constipation, the stools being dry and pale.

Chronic Affections of the Heart Muscle.

At the Congress of Internal Medicine, held at Wiesbaden in April last, Schott, of Nauheim (*Medical News*, June 25, 1898), read a paper upon the condition of the muscle of the heart in chronic diseases of the organ. Myocarditis and fat metamorphoses are far more frequently found in cardiac diseases than is generally supposed. The latter especially is found as a result of mental and physical exhaustion, the use of alcohol, tobacco, etc.

Treatment has in the very first instance to meet this muscular insufficiency. Of drugs directed to this end there is none that surpasses digitalis. Schott then took up the dietetic-balneologic-mechanical treatment, and explained the differences between Oertel's hill-climbing, Zander's machine gymnastics, and the Schott method of treatment by graduated exercises. The exactness with which the latter can be regulated and the ease of its application are decided points in its favor. There are contraindications to any mechanical treatment, —*viz.*, aneurism of the heart or great vessels, advanced arteriosclerosis, and conditions in which there is danger of cerebral hemorrhage or embolism. By means of a great number of radiograms it was clearly shown that, in not too advanced cases, gymnastics are capable of bringing about stronger cardiac contractions, and also a diminution in the size of the organ, even in cases of valvular disease with secondary muscular changes. In one case of advanced myocarditis, with an aortic aneurism, it was shown that the gymnastic exercises had greatly dilated the aneurismal sac.

The Medicinal Treatment of Tuberculosis.

The June number of the *Practitioner* is devoted solely to the subject of tuberculosis. Dr. Hector Mackenzie discusses the medicinal treatment of the disease. He has nothing new to offer in the way of drugs. He believes in the use of cod-liver oil, which is given at Brompton Hospital in doses of one or two teaspoonfuls twice a day. Extract of malt is recommended for

disguising the taste of the oil. Creosote, guaiacol, creosotal, guaiacol carbonate, bonzosol, and piperidin guaiacolate are spoken of. The newer preparations are well borne, but are expensive. The author speaks highly of arsenic, and believes it to be superior to iron. He believes that the latter increases the tendency to hemoptysis, and is contraindicated in the presence of pyrexia. Zinc oxide, in doses of five grains, is recommended for night-sweats, and for the cough lozenges of licorice and gum acacia. Dry inhalations are also useful in checking cough; a saturated alcoholic solution of menthol or a mixture of equal parts of creosote, guaiacol, and spirit of chloroform may be used. Belladonna and codeine are recommended for the relief of excessive secretion.

OBSTETRICS.

UNDER THE CHARGE OF

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ASSISTED BY

W. A. NEWMAN DORLAND, M.D.

Puerperal Thrombosis and Embolism.

Singer (*Archiv für Gynäkologie*, Band lvi, Heft 1, 1898) reports thirty-five cases of embolism and thrombosis following childbirth, as recorded in the Dresden Clinic during the past four years. He states that Mahler, in 1894, published a paper upon this subject, in which he quoted the cases that had occurred in the Dresden Maternity Hospital. It was Mahler who first called attention to the fact that the pulse was the most important factor to note as the danger-signal of this very grave complication,—much more important than the temperature. A gradual acceleration with a graded ascent of the sphygmographic wave out of all proportion to the temperature indicated an infection of the patient, with the probability of an approaching thrombosis. Gessner, who made a large number of investigations in the Berlin Maternity Hospital, also confirmed this statement of Mahler, and found the complication especially frequent in patients who presented carcinoma and fibroma of the uterus. In addition to this symptom there are other symptoms which are very constantly present. These include severe headache, lancinating pains along the course of the veins of the lower extremities, slight dyspneic attacks, pains in the pleuræ, and occasionally, when pulmonary thrombosis occurs, a blowing sound over the pulmonary vessels. All of these symptoms are of the gravest import, and, should one or more of them appear, it is most important that the patient be kept absolutely quiet. Singer claims that this is the most alarming complication of labor. He has observed all of the symptoms noted by the other authors, and like them lays special stress upon the importance to be attached to the pulse-wave. In about 90 per cent. of the reported cases the quickening of the pulse occurred and preceded the other manifestations. The frequency of the pulse-rate is to be ascribed not only to the infection that is present, but to an increased circulatory resistance. It is followed by a tem-

porary rise of temperature, and the pulse remains accelerated even after the temperature has again dropped to normal. The lancinating, lightning-like pains in the legs is also an early symptom, which is greatly aggravated by moving about. The etiology of puerperal thrombosis is mainly inflammatory, the inflammation preceding for some time the appearance of the symptoms. Bacteria have been demonstrated in the secretions in all the cases reported. In all the patients pelvic peritonitis, parametritis, fetid lochia, and ulceration of the vulva and vagina have been noted. In twelve cases the infecting germs have been gonococci; in three cases streptococci; and in three staphylococci. A mixed infection of gonococci and streptococci were noted in a few instances. In some of the cases in which germs could not be detected, it is probable that the infection was gonorrheal, since the absence of the gonococcus does not exclude the possibility of gonorrheal infection. There is also, as is well known, a great tendency for the gonococcal infection to spread beyond the uterine veins and to enter the general circulation, as has been very definitely demonstrated by the investigations of Wertheim. This writer has proved that infection by the gonococcus does not remain localized, as was formerly believed, but that it shows a marked tendency to spread to the surrounding organs by means of the lymph-channels and veins. This is a very strong argument in favor of the claim that every case of puerperal infection should not be ascribed to carelessness on the part of the attending accoucheur, but that in very many cases the septic infection is, so to speak, a form of autoinfection, due to the presence of an unsuspected gonorrhea which has antedated for an indefinite period the birth of the child, and which has been permitted to spread rapidly because of the favorable conditions produced by the puerperal state.

Ophthalmia Neonatorum.

Stephenson (*Medical Press and Circular*, May 25, 1898) remarks that severe ophthalmia of new-born children is nearly always associated with the presence of gonococci derived from the maternal passages. He also calls attention to the great frequency of vaginal discharges among the lower classes during pregnancy, and to the strong probability of such discharges being of specific origin. Van Schaick has recently noted that gonorrhea was a very common affection of married women. In sixty-five cases that applied to him for leucorrhea no less than 26 per cent. were found to be infected with gonococci. Fortunately, during the passage of the child through the vagina the eyelids are closed, so that the germs cannot enter, as a rule. In cases of tardy labor, however, or when there have been made repeated vaginal examinations, or forceps have been applied, the danger of infection is much greater. It is very commonly admitted that the time of greatest danger to the child is shortly after delivery, for the infectious material adheres to the eyelids and eyelashes, and can readily find entrance into the eyes either through the motions of the lids or by the nurse when giving the baby its first bath. Very rarely, a child will be born presenting a fully developed gonorrheal ophthalmia. This is very probably due to an early rupture of the membranes, some days before the birth of the child, with access of the gonorrheal virus to the amniotic cavity.

GYNECOLOGY.

UNDER THE CHARGE OF

CHARLES BINGHAM PENROSE, M.D.,

ASSISTED BY

H. D. BEYEA, M.D., AND H. L. WILLIAMS, M.D.

Deciduoma Malignum.

Hellier (*Transactions of the Obstetrical Society of London*, Part II, Vol. xl, for 1898) reports a recent case of so-called "deciduoma malignum," which furnishes a most excellent clinical picture of this rather recently recognized disease. The woman, 39 years of age, the mother of seven children, was admitted to the hospital nearly five months after her last confinement. All her labors, including the last one, had been apparently normal, and the woman was in good health until the birth of her last child.

At the last labor the placenta came away easily in ten minutes, followed later by a considerable postpartum hemorrhage. A bloody and brownish discharge continued at irregular intervals for four months, when it began to become extremely offensive, and the woman was confined in bed. A few weeks later, when taken to the hospital, the patient was anemic, weak, and emaciated, had a severe cough, and was expectorating a brownish, blood-tinged mucus. Crepitant râles were heard over the base of the lungs, with dulness most marked in the left side. A loud systolic bruit, considered to be hemic, was heard over the base of the heart, on the left side. Abdominal examination was entirely negative, except that the enlarged uterus could be palpated above the symphysis, reaching half-way to the umbilicus.

The examining finger, on bimanual palpation, showed the cervix in normal position, the fornices free, and the os patulous, so that the finger easily entered the cervical canal. No new growth could be felt, but on withdrawal the finger was found covered with a reddish-brown, highly offensive discharge. When placed on the table, under ether, five days later, soft granular matter could be felt in the cavity of the uterus, and a large quantity of reddish, soft, offensive material, resembling placental *débris*, was removed by a large scoop. Some hemorrhage followed and the patient was alarmingly prostrated. Intrauterine antiseptic douches were practised daily, without at all affecting the offensive discharge: consolidation at the base of both lungs rapidly advanced; the patient grew steadily weaker, the temperature at no time mounting above 101° F., and died a few days later, twenty weeks after her last confinement.

Upon post-mortem examination the uterus, appendages, and rectum were found bound together in a solid mass of reddish *débris*, which communicated by a fistulous track with the interior of the uterus, which was lined with the same brownish granular material. Immediately above the transverse colon, surrounded by coils of intestine, was a large mass of similar material, apparently a metastatic deposit. Both lungs showed pneumonic consolidation at the bases, and contained numerous nodules from a fourth to a half inch in diameter. These nodules were of similar appearance and consistency with the areas of diseased tissue above referred to, and on microscopical examination were found to be identical.

Microscopical examination showed the typical appearance of the so-called deciduoma malignum, the fields containing large areas of fibrin, infiltrated with small, round cells, and here and there islands of cells somewhat resembling decidua. In other portions cells with large nuclei were scattered in syncytial protoplasm, in which were numerous vacuoles.

The Porro Operation versus Total Hysterectomy.

Dr. Hermann J. Boldt (*American Journal of Surgery and Gynecology*, August, 1898) concludes a paper on the foregoing subject as follows:

(1) Total hysterectomy should be performed in preference to supravaginal hysterectomy with extraperitoneal treatment of the pedicle. (2) The indications for the operation are similar to those of Cesarean section. (3) Total hysterectomy requires but little more time than the Porro operation. (4) In cases in which the child is dead *in utero*, the uterus should not be opened, but removed intact. (5) In cases in which abdominal section is indicated on account of rupture of the uterus, suture of the uterine wound is unsafe, and total hysterectomy should be performed.

Tuberculosis of the Genitals in a Girl Four and a Half Years Old.

Schenck (*Pediatrics*, June 1, 1898) reports a case of a girl, four and a half years old, in whom was found in the vestibule of the vagina a loss of substance, three centimetres (an inch and a fifth) long and two centimetres (four-fifths of an inch) broad, flat, and covered by a grayish deposit having no sharply defined borders. The bacteriological examination of this deposit showed tubercle bacilli present. Both the inguinal regions presented swollen glands. The ulcer, as well as the glands, was removed by excision. Healing was delayed by the formation of pus, and was only completed after several weeks. Eight months after the operation the child remained perfectly well. The removed glands were also found to contain giant cells and tubercle bacilli on microscopical examination. He believed the manner of infection to have been as follows: The child had a habit of frequently scratching her genitals with the fingers; as she saw a great deal of patients suffering from tuberculosis, it was safe to assume that her fingers became contaminated with tuberculous virus. Another explanation was that small ulcers being present on the genitals, their infection by direct contact with tuberculous sputum or feces was easily possible in a place like Reichenhalle.

Puerperal Tetanus.

Kuhnan (*Berliner klinische Wochenschrift*, July 11 and 18, 1898) reviews the literature of puerperal tetanus. Of twenty-four cases examined since the recognition of the tetanus bacillus, this microbe has only been found in three. Chantemesse and Widal proved its presence in pieces obtained by the curette from the uterus after death. Heyse found it in the lochia, both morphologically and by experimental investigation. Stern produced tetanus by inoculating pieces from the endometrium into animals. The author then records a case in a woman, aged 42, very carefully investigated. The labor appeared to be quite normal. The patient had a vaginal douche on the sixth day and got up. Two days later there was an offensive vaginal discharge. Ten days after de-

livery headache and difficulty in swallowing supervened. Attacks of spasm came on when attempts at swallowing were made. On admission, on the next day, there was much cyanosis, retraction of the head, trismus, and the risus sardonicus. Attempts to swallow brought on attacks of spasm, when the breathing stopped, and the face became blue. The attacks lasted about three minutes, and consciousness was not lost. Behring's tetanus antitoxin was injected directly into the veins. Death followed shortly afterwards. At the necropsy the spleen was found enlarged, and the uterine cavity contained discolored, tenacious secretion. The endometrium presented a grayish-green appearance. Several varieties of microbes, including the streptococcus, etc., were found by cultivation in the lochial discharge obtained during life, but not the tetanus bacillus. Bacilli resembling the latter, however, were found in the endometrium, and a number of microbes, including the tetanus bacillus, were also obtained by cultivation from it. Four out of twelve animals inoculated developed tetanus. Inoculation of animals with the earth obtained from the cracks in the floor, also with straw taken from the mattress, as well as with splinters from the patient's abode, gave positive results. Injection of the urine gave no result. Injection of blood serum from the patient also induced tetanus. The nervous system was comparatively healthy. The spasm of the larynx, which ultimately caused death, reminded one of hydrophobia and was a striking feature of the case. The case was characterized by a mixed infection with bacteria of putrid decomposition, septic microbes, and the tetanus bacillus. The finding of the tetanus bacillus in the neighborhood of the patient explained the origin of the disease. The author thinks that the patient was infected through the vaginal douche.

PATHOLOGY

UNDER THE CHARGE OF

JOHN GUITÉRAS, M.D.,

ASSISTED BY

DAVID RIESMAN, M.D.

Bacteria in Progressive Cirrhosis of the Liver.

Adami (*Lancet*, August 13, 1898), while investigating the so-called Pictou cattle-disease of Nova Scotia, found a specific micro-organism in the form of a diplococcus. At times it was a stumpy bacillus, at others it was diplobacillus, and resembled to some extent the micro-organisms of hemorrhagic septicemia in the lower animals, but, unlike them, it had a faint capsule. It grew upon all ordinary media, and was pathogenic for rabbits, guinea-pigs, and mice. This discovery suggested to the author, in view of its close histologic similarity to Pictou cattle-disease, an investigation of human hepatic cirrhosis, and he succeeded in finding in stained sections of a large number of livers, more or less advanced in cirrhosis, a peculiar bacillus occurring as a very minute body, best visible with oil-immersion lenses of from one-eighteenth to one-twentieth inch focus. The organism presented itself as an ovoid bacillus or as a minute

diplococcus surrounded by a distinct halo. The bacilli were present in greatest numbers in the liver-cells, but were also found in the new connective tissue and sometimes along the lymphatic capillaries, but so far have not been found in the bile-ducts. The sections, both of Pictou disease and of human cirrhosis, are prepared by staining the tissues with carbol-fuchsin and bleaching them afterwards in the sunlight. The author had no difficulty in securing cultures of the organism in Pictou disease, and, after many efforts, also succeeded in growing it from a case of cirrhosis of the liver, in a woman, 56 years of age. In broth it assumed a diplococcus form, on agar that of a short or long bacillus. It was obtained not only from the liver, but also from other organs. The author asks to have his observations checked by other investigators, and suggests it as probable that the micro-organism causes not only cirrhosis of the liver, but also other hepatic diseases, as well as diseases of the kidneys and other organs.

Concerning the Icing-Liver (Curschmann) and the Pericarditic Pseudo-cirrhosis of the Liver (Pick).

Under the name of Zuckergussleber, Curschmann, in 1883, described a morbid condition characterized by disease of the liver-capsule, intermittent ascites, and absence of interstitial inflammation in the liver.

Siegert (*Virchow's Archiv*, Band cliii, Heft 2) collects the recorded cases and adds one of his own, the history of which is briefly as follows: A boy, aged 10 years, had some obscure cardiac trouble; later anasarca and ascites appeared, with thickening of the liver-capsule; pericarditis and pleurisy also developed. At the autopsy there were found tremendous thickening and contraction of the capsule of the liver, adherent pericardium, thickening of the right pleura, obliteration of the left pleural cavity; no cirrhotic processes in the liver itself.

This case, and others recorded, enables the author to lay down some definite data, which, as far as they come within the domain of this department, we shall quote here.

The disease, whatever its cause, may begin in one of three ways: as a primary perihepatitis, as a primary right-sided pleuritis, or as a primary pericarditis. Whatever the beginning, the process is apt to affect in the end the pleura, pericardium, and hepatic peritoneum,—it is a form of polyserositis. The disease is most common in early life, especially in childhood and in the female sex. Its causes are various; it may follow infectious fevers, and other diseases that are prone to involve the serous membranes.

The symptom-complex described by Pick differs from Curschmann's disease in the absence of the icing-liver, and the fact that the ascites is due to indurative processes in the liver following circulatory disturbances in the portal vein. Both have obliterating pericarditis in common.

The Reclassification of some Organic Nervous Diseases on the Basis of the Neuron.

Mills (*Journal of the American Medical Association*, July 2, 1898) discussed this subject at the recent meeting of the American Medical Association. The following is an abstract of his paper:

A few neurologic writers have already spoken of organic neuronic diseases,

and many views and theories, as well as a considerable terminology springing from the doctrine of the neuron, have rapidly been developed.

The most important point of the present communication is to direct attention to the fact that the time has arrived for applying the theory of the neuron, or the nerve-cell regarded as an anatomic unit in the classification of some of the most important organic nervous diseases, and especially many of those which have been hitherto placed under such heads as system diseases and primary degenerations.

In a general way, the diseases to which I shall chiefly refer may be classified under the three heads of *toxemias, inflammations,* and *primary degenerations,* but more especially the last. In a fundamental sense they might probably all be classed as toxemias, since the chronic scleroses and degenerations, as well as various recognized forms of peripheral and central inflammation are primarily due to a toxic cause, using here the word toxic in its broadest sense.

Accepting the classes of toxemias, inflammations, and degenerations, many of these would be better grouped as neuronal or neuronic diseases rather than as diseases of the brain, spinal cord, or of the peripheral nerves, as they have usually been designated.

Not only do toxic agents resulting in inflammations and degenerations tend to attack special systems of neurons; but not infrequently a selective tendency is exhibited as regards the sensory, the motor, the intercalary, or the association systems of neurons; and more than this, special portions of the motor, of the sensory, or of the intermediate chain of neurons are liable to be attacked in particular instances, while other portions of this particular system escape. The facts at our command are chiefly with regard to the sensory and motor projection systems, but the evidence is accumulating that in particular cases commissural, associating, and storage systems may also be liable to elected system diseases.

The term "system disease" is one which has long been in use in neurology. Commonly it has been applied to those diseases of the neuraxis, and especially of the spinal cord, which attack, or are supposed to attack, exclusively certain tracts or regions of nerve-fibres or nerve-cells having common anatomic relations and physiologic properties. It is, however, more scientific and more helpful, practically, to consider system diseases from the basis of the neuron than to regard them as diseases of the cord or of the brain.

One point to be strongly emphasized incidentally is that the toxic agents tend primarily to attack systems of neurons as a whole, and not this or that particular part, as the cell corpus, the axon, the collaterals or terminals. It is true, however, that the destructive influence of the poisoning agent may be first exhibited, so far as can be learned by the means of investigation at our command, in one or in another portion of the nerve-cell.

The disease which has so long been known by such names as locomotor ataxia, tabes, tabes dorsalis, and posterior spinal sclerosis needs, from the stand-point of the neuron, to be presented in a new pathologic light, but I cannot review here the recent literature of this subject; indeed, this is not the purpose of the present contribution, which is rather to present broad suggestions regarding neuronic classification. Using terms as we now commonly employ them, tabes, like other diseases to which attention will presently be directed, is neither purely spinal nor purely neural, neither purely central nor purely peripheral; but it is an affection primarily of sensory neurons or nerve-cells, and Langdon, with others, has very properly suggested to regard it as

a "sensory neuron degeneration." "As a result of predisposition, hereditary or acquired, and the action of a toxin or toxins (left by a preceding syphilis, usually though not invariably), the nutrition of the nervous system as a whole is lowered. In certain groups of sensory neurons (muscle sense, iris reflex, optic nerve) the impairment is greater or the resistance of the tissue is less, and in these groups degenerative changes occur."

Tic douloureux and some of the forms of primary degeneration which single out the olfactory, optic, cochlear, vestibular, and glosso-pharyngeal nerves should, in the opinion of the writer, be classified with tabes as sensory neuron degenerations.

Most authors still content themselves with describing the pathology of ataxic paraplegia as sclerosis attacking the lateral columns and part of the posterior columns, the posterior root-zones usually escaping disease. The lesions in the so-called spinal form of hereditary ataxia differ from those of acquired ataxia paraplegia in that the lesions are more extensive and involve the posterior root-zone in all regions of the cord, and the whole of the posterior columns except the small region to the inner side of the neck of the posterior cornu, the direct cerebellar tract being also involved. It would be better to class these diseases as instances of mixed neuron system degeneration. We have in them degeneration beginning both in the sensory neuron systems and in the motor neuron systems, and in the case of hereditary ataxia involving additional special systems.

In amyotrophic lateral sclerosis the parts early invaded are the terminals and collaterals of the cortical motor neuron, and later the ganglion-cells of the ventral horns. Both the direct and crossed pyramidal tracts and some of the systems of short fibres in the lateral columns, as well as the cells of the ventral horns, have been found degenerated in careful post-mortem examinations. Somewhat frequently in this disease the nuclei of the cranial nerves and the pyramidal tracts in the oblongata and pons are implicated in the degeneration, and in rarer cases this has been traced upward to the peduncles, and even to the motor cortex. In extremely rare cases even the cells of the motor cortex have been found to take part in the disease. It is not improbable that implication of the entire extent of the cortical motor neuron will be more frequently found when the present methods, advanced as they are, are improved and investigations are more complete. The disease is in reality one attacking two systems of neurons, and at least one of the names used as descriptive of it should indicate this fact.

Those forms of progressive muscular atrophy, either acquired or embryonal, which presumably have their origin in the nerve-cell, should be classified under the head of motor neuronal degeneration, and then subclassified according to their position and extent. Bulbar paralysis should also be classified under motor neuronal degenerations, and subclassified according to the special cranial nerve system involved. More or less generalized cranial motor neuronal degenerations would include the different types of bulbar paralysis; and motor neuronal degenerations of special nerves would give such well-known affections as lingual atrophy, facial atrophy (here including painless tic), and the atrophic ophthalmoplegias.

The so-called "primary lateral sclerosis" is something of a stumbling-block in our efforts at neuronic classification. According to views long accepted, in this affection the lesion is a degeneration or a sclerosis of both lateral columns, usually beginning in the white matter of the lumbar cord and subsequently passing up the cord, but without involving the cells of the ventral

horns. In other words, according to this view we have a primary degeneration attacking and confining itself to the processes of the nerve-cells. While this disease has, however, long held its place in the nosology of nervous diseases, only an exceedingly limited number of autopsies *apparently* uphold the pathology above indicated. The probabilities are altogether against the idea of a true primary lateral sclerosis; and the cases which present the well-known symptomatology of this affection can probably all be otherwise relegated, as to Erb's spinal paralysis, amytrophic lateral sclerosis, and hysterical spasmodic paraplegia.

The application of the theory of the neuron to classification is most readily made in the case of the degenerative diseases, and yet the same truths are applicable to diseases which more rapidly run their course, as overwhelming toxemias or active inflammations. In Landry's paralysis the peripheral motor neuron is attacked and largely destroyed. In poliomyelitis, both of the infantile and of the adult type, in the polioencephalitis superior and inferior of Wernicke, and in the cortical polioencephalitis of Strümpell, motor neuron systems are attacked. Much controversy has taken place as to whether in multiple neuritis the affection is primarily one of the peripheral nerves (that is, of the axis cylinder processes) of the cell bodies, or of both. Much evidence, clinical and pathological, is certainly in favor of the view that polyneuritis in many cases is a true peripheral disease; but in many other cases those forms of inflammation which are usually designated as neuritis and as poliomyelitis involve the entire neuron, and not simply the peripheral nerve (in the ordinary acceptation of the use of the word "peripheral"), on the one hand, or the cell bodies in the ventral horns on the other. Those forms of so-called polioencephalitis and polyneuritis which have been most studied are now almost universally conceded to be either of infectious or toxic origin. With regard to multiple neuritis it is no new thing for me to teach the involvement of both nerve and cord in a large number, if not in a majority, of the cases. Long before the theory of the neuron was thought of, I expressed my belief that in many cases of so-called multiple neuritis both periphery and spinal centres were implicated, in other words, as then expressed, we had a concurrence of multiple neuritis and of generalized poliomyelitis in the same case. Several recent investigators have shown involvement of the posterior roots and even of the entire sensory and motor neurons both in multiple neuritis and in cerebro-spinal meningitis. Long ago I also recorded clinical observations on cases of multiple neuritis which eventually became cases of true tabes. Cases of poliomyelitis with implication of the peripheral motor nerves are also on record.

These diseases are, therefore, in some cases at least, neither instances of neuritis in a strict sense nor of poliomyelitis. They are perhaps what might be termed "neuronitis," and this term has been suggested, but seems to have an unnatural sound even to a neurological ear.

While the facts which point to the importance of reclassifying certain diseases on the basis of the neuron are clear and convincing, it is difficult to determine on a simple and practical method of doing this. It will probably be best for clinical reasons to arrange these diseases in the first place under the heads of *embryonal* and of *acquired neuronal diseases*, and then to subclassify these according to the particular system or systems of neurons attacked. This subdivision would include (1) diseases of the sensory neuron systems; (2) diseases of the motor neuron systems; (3) diseases of both sensory and motor neuron systems at the same time; (4) diseases of inter-

calary or associating systems of neurons; and (5) diseases in which numerous systems of neurons are more or less indiscriminately attacked. The fourth and fifth categories will receive only passing attention in this paper. Within these groups an effort could of course be made to subclassify toxemias, inflammations, and degenerations, but this will not be attempted in the present paper, and perhaps it would not answer any useful purpose to make the attempt. By far the larger number of neuronal affections are perhaps to be classed under the general head of primary degenerations, at least with our present pathological knowledge; but toxemias and inflammations which do not lead to degeneration are also, as I have already indicated, to be included.

Every thinking neurologist has felt the importance of having some good method of classifying under some general head the numerous hereditary or family affections. The theory of the neuron offers us one of the best methods of doing this. The embryonal or family diseases can be classified with some approach to success under the different physiologic systems of neurons. Under primary embryonal degenerations of motor neuron systems, for instance, such affections as Little's disease, and perhaps other forms of infantile diplegia or hemiplegia, and some of the forms of juvenile muscular atrophy might be grouped; under embryonal degenerations of sensory or of mixed sensory and motor neuron systems might be included Friedreich's ataxia, hereditary cerebellar ataxia, and the common type of syringomyelia; and under special forms of embryonal neuronal degenerations could be classed amaurotic family idiocy, so-called Huntingdon's chorea, for which Halleck has suggested the name of *dementia choreica*, and even perhaps some of the special types of the insanity of developmental periods.

Amaurotic family idiocy is a type of affection in which numerous systems of neurons are arrested in their development, while general paralysis of the insane is a type of acquired disease in which numerous systems of neurons are more or less indiscriminately attacked. Hirt, by classifying this disease under the head of general diseases of the nervous system, recognized the importance of taking it from the category of cerebral affections or of ordinary insanities. Provisionally the views expressed in the previous pages might be in part summarized in tabular form as follows:

Embryonal Neuronal Degenerations.—I. Sensory or sensorimotor types. (1) Friedreich's ataxia; (2) hereditary cerebellar ataxia; (3) syringomyelia.

II. Motor types. (1) Spastic diplegia (some types, as Little's disease); (2) progressive muscular atrophy (some types).

III. Mixed and multiple types. (1) Amaurotic family idiocy; (2) dementia choreica (Huntingdon's chorea); (3) developmental insanity (some types).

Acquired Neuronal Degenerations.—I. Sensory types. (1) Tabes; (2) tic douloureux; (3) primary degeneration limited to nerves of the special senses.

II. Motor types. (1) Progressive muscular atrophy (some types); (2) amyotrophic lateral sclerosis; (3) progressive bulbar paralysis; (4) primary degeneration of particular motor nerves, as of the hypoglossal, facial, trigeminal, and ocular.

For the present it will perhaps be best to place neuronal inflammations and toxemias in a special class, including (1) acute ascending paralysis (Landry's paralysis); (2) anterior poliomyelitis; (3) polioencephalitis superior and inferior of Wernicke; (4) cortical polioencephalitis of Strümpell; (5) multiple neuritis and neuromyelitis.

DERMATOLOGY.

UNDER THE CHARGE OF

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ASSISTED BY

M. B. HARTZELL, M.D.

Keloid and Intractable Patches of Chronic Inflammation of the Skin treated by Scarification.

Lawrence (*British Medical Journal*, July 16, 1898) employed the following method in treating a case of painful keloid, situated upon the dorsal surface of the right forearm, which has been twice excised without relief: The tumor was "mince-meated" with a five-bladed scarifier, in which the blades were one-twentieth of an inch apart, the incisions being made in both the longitudinal and transverse directions. After dusting with iodoform, pressure was applied by means of rubber tubing and plaster; and this pressure was kept up for several months. One year after the operation the parts presented the appearance of thin scar tissue and were free from pain. The author has found the same method of treatment successful in chronic eczema, lupus erythematosus, chronic lichen planus, and other chronic inflammations of the skin.

Jacquet (*Annales de Dermatologie et de Syphiligraphie*, No. 4), in a communication made to the Société de Thérapeutique de Paris, also reports the successful employment of scarification in eczema; and in two cases of psoriasis, which had resisted other methods of treatment, it likewise proved effective.

The Histology of Iodic Acne.

Giovannini (*Archiv für Dermatologie und Syphilis*, Band xlv, Heft 1) concludes from his study of the subject that iodine acne is an acute, purulent, superficial folliculitis and perifolliculitis, the seat of the inflammatory process being in and around the hair-follicle almost exclusively. The sebaceous glands, in the majority of cases, present the appearances of simple irritation, being affected secondarily. Notwithstanding the normal appearance of the skin, the author found many of the hair-follicles more or less atrophic, and either without accompanying sebaceous glands or with atrophic glands, from which he concludes that the affection has a certain preference for hair-follicles which have already undergone some change.

Ringworm of the Scalp in an Adult.

Dr. Colcott Fox (*British Journal of Dermatology*, July, 1898), at a meeting of the Dermatological Society of London, presented a man, forty-two years of age, with ringworm of the scalp, there being two finger-nail-sized patches. With the aid of a magnifying glass black stumps of broken hairs could be seen in the follicles. Microscopical examination of these in liquor potassæ revealed the presence of fungus, and cultures made from them were typical of the *endothrix trichophyton*. The man had probably contracted the disease from his son, 15 years of age, who had a scaly patch on the scalp.

Miliary Tuberculosis of the Skin and adjoining Mucous Membranes.

Kaposi (*Archiv für Dermatologie und Syphilis*, Band xliii) believes that miliary tuberculosis of the skin is a much more frequent affection than one would be led to suppose from the publications upon the subject, since he himself has seen twenty-two cases in his clinic and others in his private practice. Clinically it is a well-defined disease, to be distinguished from lupus, and all other so-called tuberculous affections of the skin. It occurs almost entirely in individuals suffering from some other form of tuberculosis, usually of the respiratory tract, but by no means only in the last months of life of such persons or in acute miliary tuberculosis of internal organs, as has been asserted. The tuberculosis of the skin is very often associated with a like affection of the neighboring mucous membranes, primarily or consecutively. The prognosis as to the local process is not absolutely unfavorable, since spontaneous healing may take place or it may follow appropriate local treatment.

Production of Favus Cups by Inoculation of a Pyogenic Trichophyton.

Sabrazes and Brengues (*Annales de Dermatologie et de Syphiligraphie*, No. 7, 1898), at a meeting of the Société d'Anatomie et de Physiologie normales et pathologiques de Bordeaux, showed cultures and illustrations of mice inoculated with a pyogenic trichophyton obtained from a parasitic sycosis. The fungus, morphologically like a trichophyton, produced in man scattered pustulo-vesicular patches, in cultures foci arranged in cups, and in mice colonies which, objectively and microscopically, did not differ from favus cups.

Treatment of Alopecia Areata.

Rietema (*British Journal of Dermatology*, July, 1898), in the First Annual Report of the Dermatological Society of the Netherlands, reports the successful treatment of alopecia areata by means of lactic acid, applied gradually in increasing strengths, beginning with a 50-per-cent. solution.

Acute Vitiligo associated with Peripheral Neuritis.

Emery (*Annales de Dermatologie et de Syphiligraphie*, No. 7, 1898), at a séance of the Société Française de Dermatologie et de Syphiligraphie, reported the following case: A man, 43 years of age, employed in a cycle factory, in cleaning the several parts of the machine preparatory to nickel-plating, presented the symptoms of peripheral neuritis, particularly marked in the upper extremities. Two months later, coincidently with the appearance of pains and paralytic phenomena, large pigmentary patches appeared upon the arms, particularly the posterior surfaces of the forearms. The evolution of these patches was extremely rapid. Similar patches of vitiligo, but much more accentuated, were found on different parts of the body. The neuritis was thought to be due to the employment of petroleum products for cleansing purposes.

MISCELLANEOUS.

Meeting of the Army Medical Board.

The Army Medical Board will be in session at Washington City, D. C., during October next, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the board will make application to the Secretary of War, before October 1, 1898, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character, and habits. The candidate must be between 22 and 29 years of age, and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the board. Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School.

Further information regarding the examinations may be obtained by addressing the Surgeon-General, United States Army, Washington, D. C.

George M. Sternberg,
Surgeon-General, U. S. Army.

Hara-Kiri.

Dr. Richard H. Harte describes this form of self-destruction, which is practised by Japanese *Samurai* (gentlemen of the military class), and then tells of a case coming under his personal observation, which ended in recovery. The ceremony as carried out by the Japanese is briefly as follows: The condemned, in the presence of only his friends and the high officers of the court, sits upon a slightly elevated platform. A sharp knife is handed him, which he plunges into his abdomen to the left and below the navel, draws it transversely

across to a corresponding point on the opposite side and then removes it. He now inclines forward and a *kaishaku* (executioner) cuts off his head with one blow of a sharp sword. In the case observed by Dr. Harte, a man of about forty years of age, during a fit of melancholy, stabbed himself in the abdomen and cut transversely across the abdomen so that a large part of the intestines protruded from the wound. He was taken to the Pennsylvania Hospital, where ether was immediately administered. Hemorrhage was stopped, fifteen inches of small intestines which had been torn from its mesenteric attachment, resected, and the rest of the intestines cleansed with sterile water and returned into the abdominal cavity. The wound was approximated by deep retaining sutures passing through all the layers of the abdominal wall and each plane of tissue united by a separate row of catgut sutures. Drainage was provided for by a two-way glass tube. Except for a stitch-abscess the patient made an uninterrupted recovery, the stitches being removed on the twelfth day.—*Annals of Surgery.*

BOOK NOTICES.

Aids to Aseptic Technique. By A. D. Whiting, M.D. Philadelphia: J. B. Lippincott Company, 1898.

This work has been written for those whose duty it is to prepare materials for modern surgical operations. The author speaks briefly of the history of antiseptic and aseptic surgery and of bacteriology, after which the methods employed in preparing the various materials employed in surgery are given. The terms asepsis and antisepsis are, perhaps, used without sufficient discrimination. The aseptic operation has come to be known as that which is performed without the use of chemical germicides, while the antiseptic method employs these means to prevent infection of the wound.

The directions in many instances are not as specific as they should be. This is the case in the directions for the cleansing of the field of operation and the hands of the operators. For example, it is useless to employ either ether or turpentine while the hands are wet with water, as neither will act upon the oil in the skin under these conditions. Therefore, alcohols should follow the soap-and-water scrubbing before the ether is used, and the hands should be again immersed in alcohol before the antiseptic solutions usually employed as the last step in the cleansing will act.

The author's conception of the 5 and 10 per cent. iodoform gauze is somewhat at variance with that of the majority of manufacturers of this article. For example, a 5-per-cent. gauze should represent 5 parts

of iodoform in 100 parts of gauze by weight, whereas the author employs a 5-per-cent. mixture to moisten the gauze, which has no definite relation to the latter. It does not seem clear what advantage the bicarbonate of soda presents over the less expensive carbonate in the boiling of instruments. It is to be regretted that the description for the preparation of catgut was not given more explicitly, as this is probably one of the most important matters in modern surgery.

The views of the author are in the main those employed at the present time, and the book will, no doubt, be found useful for reference by those engaged in this work.

Archives of the Röntgen Ray. Edited by W. S. Hedley, M.D., and Sydney Rowland, M.A. Volume II. London: The Rebman Publishing Co.; Philadelphia: W. B. Saunders.

The Archives of the Röntgen Ray, the second volume of which is now complete, passed through its first volume as the "Archives of Clinical Skiagraphy." The journal is issued quarterly as heretofore. Under its new name the publishers have extended the field which it was originally intended to cover. In addition to the pictorial record, which chiefly distinguished the first volume, there have been added the proceedings of the new "Röntgen Society," original communications, notes, and correspondence.

To the present volume there has been issued a supplement, under the title of "Radiography in Marine Zoölogy," which contains thirty-six illustrations in fifteen plates.

The aim of the Archives is to present a record of all that pertains to the Röntgen ray. It cannot fail to interest and instruct those who employ the X-ray in their work.

A Manual of Legal Medicine. For the Use of Practitioners and Students of Medicine and Law. By Justin Herald, formerly Coroner's Physician of New York City and County, etc. Philadelphia: J. B. Lippincott Co, 1898.

The limited instruction on the subject of medical jurisprudence given in our medical colleges makes it incumbent upon students to acquire this information from other sources. While this work is sufficiently full to meet all the requirements of the general practitioner, its size and scope are such as to particularly recommend it to students of medicine.

The book is divided into two parts. The first treats of toxicology. The medical and legal definitions of poisons are given, and the administration, effects, absorption, elimination, and antagonism are briefly described. Remarks on the evidences of poisoning in the living from the symptoms, diseases simulating poisoning, and the general treatment of the cases follow. The evidences in the dead subject are then given. The rules and duties to be observed in poison cases are

described. The remaining portion of this part is devoted to a discussion of the various poisonous drugs. Chapter XVI treats of ptomaines and other putrefactive products.

The second part relates to forensic medicine proper. The powers and duties of coroners are defined, the phenomena and signs of death are described. The succeeding chapters include the presumption of death and survivorship, death by heat and cold, by starvation, railway injuries, feigned diseases, etc. Special reference is made to the technique of post-mortem examinations. The Bertillon system of identification is fully described. The various forms of violent death are fully considered.

The author has freely consulted the various standard works on this subject, and has in addition incorporated the results of his extended experience. The aim has been simplification and practical usefulness, and this object has been faithfully performed. We do not know of any book on this subject better suited to the needs of the student and physician than this one. The work of the publishers leaves nothing to be desired.

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MEDICAL MAGAZINE.

NOVEMBER, 1898.

SUGGESTIONS REGARDING A LABORATORY OF NEUROLOGY AND PSYCHOLOGY AT THE UNIVERSITY OF PENNSYLVANIA.

By Charles K. Mills, M.D.,

PHILADELPHIA,

Professor of Mental Diseases and of Medical Jurisprudence in the University of Pennsylvania.

Of the subjects set apart as specialties by universal consent, neurology—under which general designation psychiatry should be included—is one of the broadest. In investigation and in literature more advances have been made in recent years in this than in any other of the special branches of medicine. Far-reaching discoveries in psychology, and in the anatomy and physiology of the nervous system, have been made, while new and more valuable methods of histologic investigation and of studying the symptomatology of the diseases of the nervous system have been developed. Much of this work has been done abroad, although, during recent years, some zealous and energetic American workers have successfully entered the field. The methods of neurological teaching have made comparatively little advancement in this country; and to prepare for research, teaching, and practical work at home the American student seeks the well-equipped neurological and psychological laboratories of Europe.

One of the special objects of this communication is to call attention to some of these deficiencies, to make suggestions as to their remedy, and to appeal to those interested to assist in putting on a firm foundation the teaching of this subject at the University of Pennsylvania.

It is not the intention of the writer to criticise the university authorities or any of its teachers. The conditions which exist are due largely to a lack of clinical and laboratory facilities, which has necessitated the perpetuation of methods not fully abreast of the times; and it is our hope that, if attention is clearly called to this need, the friends of advanced medical education, and especially those interested in psychology and neurology, will come forward with material assistance.

Although the methods of teaching neurology at the University of Pennsylvania are as good, if not better, than those followed in nearly all the American medical schools, they are but little better than those which prevailed twenty years ago. One clinical lecture a week is delivered by the clinical professor of nervous diseases in the hospital of the university, this instruction being supplemented by some practical work in nervous diseases and electrotherapeutics by assistants. In addition, the writer gives during four months of the regular medical course a weekly clinical lecture on either mental or nervous diseases to those students of the fourth year who elect such instruction. The material for these lectures is drawn from the neurological department of the Philadelphia Hospital, in the arena of which institution the lectures are delivered. The professor of the practice of medicine and the professor of clinical medicine also give limited attention to nervous diseases. Neurology, so far as examinations are concerned, is ranked among the "major electives" of the fourth year, the students being examined for their standing in this elective by the clinical professor of nervous diseases. Practically all neurological courses at the university are optional.

The results attained by this imperfect method of teaching a subject so important are sometimes shown in the examinations for internes by the hospitals of Philadelphia. The student will learn to respect the subject and to pursue it with diligence when it is made one of the compulsory branches, one on which he must pass a satisfactory examination before receiving his diploma. The neurological instruction offered to students of the university should not be limited to that furnished by one or even by two chairs.

If the medical department of the university had in official connection with it a hospital for the insane, or well-equipped and well-endowed wards for patients suffering from mental disease, it might be well to have the chair of Psychiatry entirely separate from that of neurology (excluding psychiatry); but under the conditions it is probably best, as at present, to have two clinical professors, each teaching both psychiatry and general neurology. In any case the teacher of psychiatry should be classed with the other professors, having the

same recognition as is accorded to others holding chairs of equal importance.

By extramural professors and lecturers the abundant and valuable neurological material of various hospitals in the city of Philadelphia could be easily made accessible to those university students who are especially interested in neurology.

A hospital or hospital wards for nervous and mental diseases should be organically united with laboratories of research. It is only by supplementing careful work in hospital and private practice by laboratory research and teaching that the best results in the diagnosis and treatment of diseases of the nervous system can be achieved. Why should not the alumni and friends of the university, and those interested in maintaining the pre-eminence of Philadelphia as a medical centre, lend their assistance to this end by contributing the funds to erect on the grounds of the university a building which, I would suggest, might well be made a testimonial to Dr. S. Weir Mitchell, by designating it the Weir Mitchell Laboratory of Neurology and Psychology?

The name of Weir Mitchell holds first place in the neurological history of this country. As physician, investigator, and author he is one whom all should desire to honor. It is fit that a recognition of his position and services, recalling the field of medicine in which he has so successfully labored, should be made in connection with the University of Pennsylvania, to the development of which he has so largely contributed.

Should the project be realized, it might be best to combine under one roof, or in connected buildings, opportunities both for research and for teaching, so that to advanced undergraduates and to post-graduates instruction in experimental psychology, and in the anatomy and pathology of the nervous system, could be offered either in independent courses or in connection with clinical neurology, while special researches could at the same time be pursued in rooms set apart and properly equipped.

The neurological laboratory should contain models, diagrams, and gross preparations of the brain, spinal cord, peripheral nerves, and sense-organs; mounted specimens of both normal and abnormal tissues; and the preserving fluids, reagents, jars, microtomes, microscopes, and other appliances, necessary both for research and for teaching. It is impossible to gain any adequate knowledge of nervous pathology except by an actual study of specimens. In the teaching of students, and even in research, such study is too often divorced from clinical investigation. In this laboratory would be gradually

accumulated an invaluable collection representing the pathological anatomy of nervous diseases.

In connection with this laboratory should be a photographic room, with all the necessary appliances for taking photographs of cases which appear at the out-door and in-door services of the hospital. Much material, valuable in illustrating neurological lectures and contributions, is lost for lack of such facilities.

With a laboratory of psychology closely connected with such a neurological laboratory and with hospital wards, psychometric and reaction-time researches, studies in sense phenomena, and in memory, and psycho-physiological investigations in general, could be made on the diseased as well as on the healthy.

From such laboratories would go forth publications containing the results of much original investigation.

The director of such a laboratory, or of its neurological subdivision, should be professor of neuropathology, and for the more efficient development of the subject should also be one of the physicians to the neurological wards.

It may be said that other matters of greater importance wait completion before the energies and the material aid of the friends of the university should be directed to the development of a special subject or branch of instruction like neurology; but experience has shown that often several movements of a somewhat similar character can be carried forward together with almost as much ease as one. A specially announced purpose in the development of the University of Pennsylvania during the ensuing year is the erection and endowment of new laboratories. It is to be a "laboratory year" pre-eminently; and why should not a neurological and psychological laboratory, which has so much to commend it in the needs of the medical department, be included in the list of important additions soon to be made to the university?

If four years, the time now embraced in the full course of instruction in the University of Pennsylvania, as in other medical schools of equal rank, is not sufficient to carry out methods of instruction such as would be indicated by the suggestions as to the teaching of neurology in this communication, a course of five years should be speedily established; but it may not be absolutely necessary to do this at present if the curriculum was thoroughly reorganized.

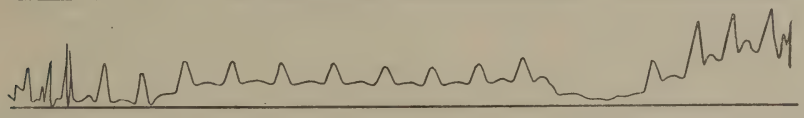
THE INFLUENCE OF RESPIRATION UPON THE HEART'S ACTION, WITH SPHYGMOGRAPHIC TRACINGS OF A CASE OF CARDIAC INHIBITION.

By Roland G. Curtin, M.D.,

PHILADELPHIA.

The reports which accompany this paper open up the subject of the relation between the action of the circulatory and respiratory organs. The observations which I wish to report to the association are as follows:

Through the kindness of Dr. Thomas J. Yarrow, Jr., of Philadelphia, I am able to present to you the report of a healthy man, a physi-



Tracing I.

cian, who could, at will, modify his circulation, and even arrest it. The accompanying tracings of his radial pulse were taken by Dr. Yarrow.

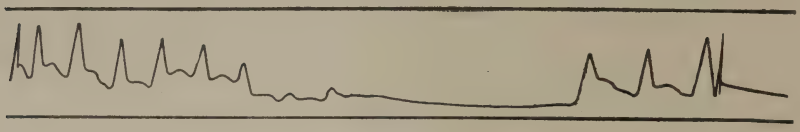
In my observations of this man, while showing his ability to change and even arrest the action of his heart, I noticed that he first modified his respiration. When he desired to stop his heart, he would take a full inspiration, hold it, and strain like a woman bearing down in labor; his diaphragm was fixed and his face red and turgid. This seemed to be a necessary procedure, preliminary to the modification

Tracing II.

or arrest of his heart's action. This man was twenty-six years old, rather short, heavy set, with light hair, and of a neurotic temperament.

You will notice that in Tracing I the inspiration was forced and held, and the will was exerted, the heart was arrested during the period of three beats; and in Tracing II, with like conditions, almost four beats were omitted. In Tracing III two beats were almost lost, and, following them, six beats were entirely absent. Respiration had en-

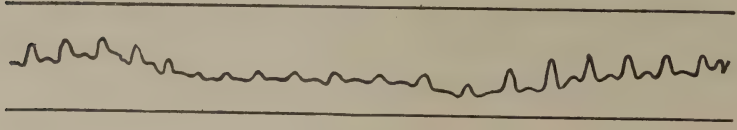
tirely ceased during that time, and the power of the will was exerted when the pulse ceased beating. In Tracing IV the breath was held, and the fifth beat, you will notice, was modified. Respiration was again resumed at the fourteenth beat; the will, in this instance, not



TRACING III.

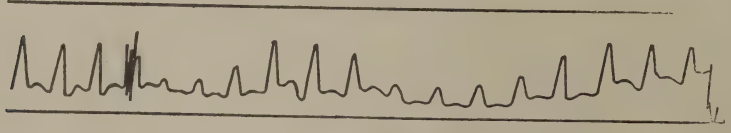
having been exerted over the heart. Tracing V shows an irregular pulse caused by irregular deep breathing.

In Tracing VI, forced, held inspiration, with straining of the ab-



TRACING IV.

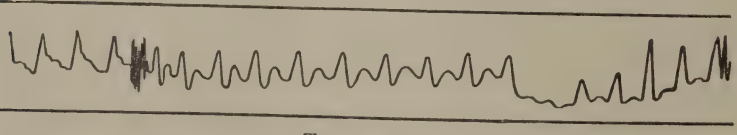
dominal muscles, was commenced after the third beat and continued. Where the interim occurs an effort of the will was made to arrest the heart's action. You will observe that the holding of the breath



TRACING V.

modified the heart's action somewhat, an effort of the will being made where the tracing near the end shows the sudden drop.

Tracing IV illustrates the influence of simply holding the breath.



TRACING VI.

In Tracing V irregular breathing caused an irregular tracing.

In every case, both the will-power and held inspiration were necessary to cause an omission of the beats.

I will call your attention to the fact that the person on whom these experiments were made was a physician, and had he not had his atten-

tion called to the subject in his studies, he probably would never have known of his ability in this direction. Perhaps many persons have the power to stop their hearts at will, but a want of the requisite knowledge or a fear of meddling with such an important organ deters them from finding out whether or not they are able to arrest its action.

I recently saw, in consultation with Dr. A. P. Lutz, a child who had a serious double mitral disease of long standing, which was associated with marked neurasthenia with heart-failure, developed by an attack of recent influenza. While auscultating her chest, I asked her to hold her breath, so that I could better hear the sounds of her heart. After the suspension of respiration during the time necessary for three breaths, I found that the heart began to slow up and to beat less strongly. This was repeated three times, with a like result each time.

Another case was a patient with uremic coma and Cheyne-Stokes respiration. The change in the rhythm of respiration had a marked effect on the action and strength of the heart, the sounds being lessened in force during the period of slowed respiration, so that only the second sound of the heart could be heard.

The influence of respiration on the heart may sometimes be observed while holding the finger on the pulse of a person who is dying. The pulse is lost after respiration ceases; soon after respiration is reestablished, and following it, the pulse is restored. This may occur several times before the patient dies. The same is true in uremic coma, opium-poisoning, as well as in other conditions.

In marked tricuspid regurgitation, when the jugulars are pulsating, we see them rise and fall with each respiration. At the end of expiration they are full, and when the patient inspires they collapse, to fill again during the next expiration.

In apoplexy and opium-poisoning we have a slowed respiration and a slowed pulse. If, in any disease, the relation between the two (four to one) is markedly changed, we generally look for some local cause.

In looking over the literature which bears upon the subject under consideration, the following extracts are interesting in this connection:

"An Englishman, Colonel Townsend, asserted that he could arrest the movements of his heart for half an hour. Cheyne relates that this colonel, who had been sick for a long time, took it into his head one day to send for Drs. Cheyne and Baynard, who were in attendance upon him, and for Mr. Skrine, his apothecary, to beg them to witness a singular experiment which he was anxious to repeat in their presence; it was to cause himself to die and to return to life. The patient lay on his back; Dr. Cheyne kept his finger on his pulse, Dr. Baynard placed his hand over the heart, and Mr. Skrine held a mirror before

the mouth. Shortly after, no arterial pulsation or cardiac movement could be felt, and the breath did not dim the glass." (Wardrop's "Diseases of the Heart.")

Wardrop ("Diseases of the Heart," p. 85) gives the result of the interesting experiment of Sir Benjamin Brodie.

It will be noticed that his breath ceased, but it is not stated whether it was preliminary to or part of the general result.

Müller's experiment shows the effect of respiration alone on the pulse: "Close the mouth and nostrils and then make a forced, prolonged inspiratory effort. Before doing so, feel the pulse and keep feeling it. Note, now, the cessation of the pulse-beat. The intrathoracic vessels are filled with blood, and the distended auricles are unable to contract."

Here, in this experiment, the pulse was seemingly arrested without any exercise of the will.

Valsalva's experiment: "Make the experiment as before, but make a prolonged, vigorous expiration. Note fall in pulse-beats." ("Practical Physiology," Sterling, Philadelphia, 1895, p. 295.)

It is a question as to whether Valsalva means to indicate a fall in the strength or a diminution in the number of beats, or both. From Fothergill: "Douders and M. Chauveau, whose stature you know, managed, after preparing himself by taking a deep inspiration which caused 4850 to 5800 cubic inches of air to enter his chest, to stop his heart for a whole minute. It was not merely by auscultation that this could be proved; the sphygmograph applied to the radial artery gave a perfectly straight line, corresponding to this space of time. Some persons, therefore, can arrest their circulation for an instant, and have shown that, when an animal is decapitated or the brain is under the influence of poison, and the heart has even ceased to beat, its action may be restored by artificial breathing."

It may be well to consider the effect of held respiration upon the circulatory and pulmonary organs.

When respiration ceases, the blood is retained in the lungs for want of proper aëration. The right heart becomes engorged, and the blood is backed into the cavæ, and, finally, to the capillaries. At that point the flow from the arteries is arrested. The cavities of the left heart not being filled, the natural stimulus to contraction is absent, and so the heart is retarded in its action. If, to the arrested respiration, a forced expiration is added, the rigid and elevated diaphragm, as well as the compressed chest walls, may further assist in oppressing the heart and retard its action. During inspiration the lungs expand, which increases their capacity for holding blood as well as air, and the

blood flows rapidly from the right side of the heart into the expanded lungs, filling them.

In expiration the reverse occurs, the lungs collapse, and the blood is squeezed out, and flows in the direction of the left side of the heart.

Wardrop ("Diseases of the Heart") says, "Inspiration may be, therefore, considered as accessory to the *venous* blood and expiration, to the arterial circulation; the one aiding the heart like a suction, and the other like a forcing pump." We may have, then, at this time, a number of conditions which will favor an arrest of the heart.

In the study of the subject of voluntary arrest of the heart, it would seem that the simple stopping of inspiration is not, usually, sufficient to accomplish it; but that another strong element is necessary; for, while but few people can voluntarily stop the heart, everybody has the ability to stop breathing. Fixation of the muscles of respiration and the arrest of breathing are certainly helps in producing this condition.

Now, what is the stronger element?

(1) The will is stronger in some persons than in others; but this factor was absent in some of the cases mentioned in this paper, for they were unconscious.

(2) The nerve-supply *may* be unusual,—*i.e.*, an augmentation of those of the cerebro-spinal system, bringing the heart under control of the will, so as to permit the individual so constituted to be able to control the action of the heart.

Obviously, it is well that we do not generally have such control of our hearts; and if we have, it is better for us not to have a knowledge of it.

Conclusions.—(1) In nearly all cases of voluntary arrest of the heart, the aid of suppressed respiration must be called in.

(2) The will alone will not cause the heart's arrest, except, perhaps, in some very rare cases.

(3) In disease and health, we have shown that the pulse is modified by respiration.

The subject I have discussed in this paper is, I think, of practical value in the treatment of some forms of pulmonary and cardiac diseases, and, I think that the study of the relation between these organs may often assist us in relieving patients of some of the more distressing symptoms. In cases of sudden and extreme heart-failure, why should we not resort to artificial respiration to keep the heart acting until the danger is over?

In opium-poisoning, when respiration has about ceased, the heart may be assisted by artificial respiration the same as is used in resuscitating drowning cases.

Dr. Williams has just shown, by his X-ray photographs, that in held inspiration the heart fails to expand to the extent that it does in ordinary respiration. He has also shown that the heart expands less where the lung is impeded by any disease. His demonstrations seem to prove the position I have taken in my paper, that the heart is greatly influenced by the action and inaction of the lungs.

A PLEA FOR ACCURATE DIAGNOSIS.[1]

By M. Howard Fussell, M.D.,

PHILADELPHIA,

Instructor in Clinical Medicine, University of Pennsylvania.

I PRESUME there are none among us who have not had the melancholy opportunity to say to themselves, "If I had known of the condition of this patient sooner, the grave complications could have been averted," or perhaps death may have occurred, owing to a condition entirely overlooked. The feelings of the physician under these latter circumstances are the most trying of any to which we are subjected. I certainly have had occasion more than once, in my own practice, to regret such an occurrence, and know whereof I speak. I have observed it many times in the practice of others, and am therefore forced to believe I am not alone in my melancholy experience.

The sooner the physician recognizes that all deaths in his practice are not due to the hand of God, and that all cures are not of his own making, that much sooner his avoidable deaths will decrease and his practice become trustworthy.

Every practitioner, the graduate of any one of the good schools of medicine, has the power within himself to make an accurate diagnosis, whenever a diagnosis is possible.

The power of making an accurate diagnosis does not lie in a peculiar and rare acumen possessed by the few. A diagnosis can be made solely by careful attention to the history of the case, by duly weighing the symptoms presented, and by careful and repeated examinations of every organ in the body of the individual applying for treatment, and by proper interpretation of the conditions found to exist. Let me illustrate what I mean by a diagnosis.

A diagnosis worthy of the name is not made by labelling John

[1] Read before the Berks County Medical Society, August 9, 1898.

Smith as having typhoid fever, or as suffering from scarlet fever, phthisis, or carcinoma, as the case may be. He who goes that far and stops has just made a beginning, to be contented with that is to subject himself to criticism of the well-informed, and to allow his patient to run the risk of many serious or, perhaps, fatal complications. It is, of course, necessary and valuable that the general disease be recognized, but, as was said in a late number of the *Philadelphia Medical Journal*, it does not avail much that we should know that John *has* typhoid fever, but it is of inestimable value to both physician and patient to know that John is suffering *from* typhoid fever, and also that his heart, his lungs, his kidneys, indeed, that all his organs are in a healthy condition, or the opposite.

In other words, no diagnosis is complete or safe unless we are constantly aware of the condition of each individual organ in the body.

An individual may know the name of every plant which grows, but his knowledge is barren, and he cannot lay claim to the name of botanist, unless he knows the various organs of the plant, their structure, and their uses. If he knows these, he may be a great botanist, though he cannot give a family or generic name.

In these later years the studies of the pathologists have made such great strides that many conditions can be properly recognized only by the finer methods of diagnosis discovered and instituted by them.

The knowledge of the presence or absence of the plasmodium of malaria may determine your treatment as between malaria and typhoid. The presence of tubercle bacilli in the sputum will frequently open one's eyes to the true nature of an otherwise inexplicable failure of health.

Without the examination of the urine for albumin, and also for tube-casts, it is impossible to diagnosticate nephritis. Careful examination, chemically and microscopically, of the stomach contents will frequently clear up the cause of a persistent indigestion. The continued presence of diphtheria bacilli in an exudate in the throat will frequently enable us to recognize an otherwise unsuspected diphtheria,—and so I might continue to bore you on the wisdom and the value of availing ourselves of the means in the hands of the pathologist.

Fortunately for humanity, the boards of health in our various cities and towns have recognized the value of such examinations, and have placed for the use of physicians all over the country these means of clearing up dark and otherwise impossible diagnoses. Let me insist just here, however, that while we must fully recognize the in-

estimable value of the aid pathologists are able to give us, we must not rest satisfied with them alone. To do so would be but again labelling our cases against which I have been speaking. We must use them as aids, and never forget the constant necessity of being aware of the condition of all the organs.

That such a diagnosis is necessary, or rather that such steps are imperative, before the treatment of a case should be undertaken, is evidenced by the fact that one can number on the fingers of one hand all the diseases which have a specific therapeusis; and even in such complaints the treatment depends as much upon the complications which may occur in the various organs as upon the administration of the specific drug.

Careless or improper diagnoses are just as frequently the result of faulty methods of observation as of lack of knowledge.

In order that we may avoid the disasters consequent upon such faulty observation each one of us should be methodical in his work, should have a definite plan, varied only by exigencies, our growing experience, and our increasing knowledge.

I will presume to speak of the methods which I personally employ. I suggest them neither as original nor perfect, but as a good type to be followed.

There is a vast difference between the practice of medicine in hospitals and in private.

The chiefs of medical wards have their various assistants, who do the details of history, making urine examinations, blood examinations, etc., which are so necessary to the proper understanding of cases.

The general practitioner has long trips to take, is occupied by petty worriments, and annoyed by multitudes of duties, which unfortunately, both for physician and patient, go far to make the life of a general practitioner humdrum and tiresome, and lessen his interest in his life-work. Many of these annoyances may be lessened, the interest of the physician in his patient heightened, and the comfort and well-being of the sick increased a hundred-fold by the application to the private work of some of the methods of hospital practice.

The methods I shall suggest are practical, they are used by hundreds of general practitioners, though neglected, unfortunately, by the great mass which goes to make up the whole of the profession.

Such means are satisfactory to the practitioner and beneficial to the patient. The points to be observed in the management of any case are (1) the history; (2) the physical examination; (3) the diagnosis.

I know of no point which is necessary in the management of any disease which is so frequently neglected as the history of the case.

Frequently the patients are so well acquainted with the physician that, at the time at least, the family and previous history are well known. This gives an excuse, and gets him into the habit of neglecting to record the necessary facts. Every history should embrace the age, sex, family history, previous history, and history of the present condition. These points should be recorded in some manner, and the histories kept together with the physical examination, treatment, and course of the case for future reference.

The habit of history-taking and recording of minute points is of the greatest possible importance.

It familiarizes the physician with the particulars of the case. The physical signs and symptoms which are recorded as they are observed can be compared with those occurring later in the case. It is impossible without some such method to keep track of the varying changes which occur in the multitude of cases which come before our notice, and without a picture of the case as it has occurred constantly before our eyes it is impossible to do the patient justice. Such records are of importance, too, in that the patient observes that his physician is taking interest in his case, is never at a loss to know what symptoms have preceded or what treatment has been used. His reliance in such a physician is much greater than it would be if the doctor took but a passing interest in his case.

Having recorded the history proper of the case, the next step is the physical examination of the patient. The heart, the lungs, abdomen, and the urine should be examined as a routine matter in every case which comes before our notice, no matter what symptoms he complains of or how meagre his history.

It is no exaggeration to say that I have seen myriads of heart lesions overlooked, or lung involvement unsuspected, or a severe nephritis undiagnosticated from a failure to practise these routine examinations. When a patient complains of nausea, vomiting, pain in the abdomen, it is so easy to say, "Oh, you have a little dyspepsia; we'll soon fix that up." It is tiresome to make an examination, but the examination in just such cases is most important. Scarcely any one would fail to examine the urine if symptoms of nephritis were complained of, or the heart, if symptoms pointed towards that organ, but the careful practitioner, the skilful diagnostician, is he who discovers such lesions before they have given rise to symptoms.

The reason the Flints, the Peppers, the Tysons, and the Oslers are sought after as diagnosticians, while perhaps dependent to a certain extent on the superior intellects of the gentlemen, is still more due to the painstaking care with which they get a history, study the individual organs, and search for the cause of each symptom

Let us all emulate these great men, and when we have the honor to have them as consultants, we will less often find ourselves in the unenviable position of not having recognized some latent lesion. The value to ourselves and to our patients of repeated examinations of the chest, abdomen, the nervous system, of the blood, and of the urine is inestimable. We can recognize diseased conditions only when we are familiar with normal states. The hospital physician learns to become expert as a diagnostician because of the thousands of examinations he makes, many of them of normal individuals. The plain, unassuming family physician has the same opportunity, limited only by the number of his patients. Let him embrace the opportunity, he will become expert in all the diseases that present themselves and recognize deviations from the usual type. He will learn much; the patient will get better treatment.

Both the history and the physical examination should in some manner be recorded. In my earlier practice I made use of books, made my records at the bedside, and recorded my cases as they occurred without reference to disease. Indexing became a tiresome necessity. I have now entirely discarded books, and use cards that can be conveniently carried in a small portfolio. The entire case is reported on this card, and when it is finished it is numbered and double-indexed, according to the name of the patient and the disease. These latter cards are smaller, and are arranged alphabetically. The large or history cards are arranged numerically, so that in a moment I can refer to any patient whom I have treated or to any disease that has occurred in my practice.

Having secured your history, and made the physical examination of each and every organ, you are ready for the diagnosis. This, as I have said, to be worthy of the name, must not simply give a title to the disease, but must take into consideration the exact conditions as you have found them. Upon these conditions your treatment, the ultimate aim of diagnosis, must depend.

One does not have to go outside his own experience to note cases in which a methodical examination, such as I have described, would have made the outcome entirely different.

A few days since, a woman applied at St. Mary's Hospital, Philadelphia, suffering from what her doctor said was chills and fever.

Chills and fever she had to a verity. The history elicited a miscarriage eight weeks ago, with ill health ever since. The past two weeks she had been suffering with periodical fever and chills, with rapid loss of health and strength. The past few days there had been some abdominal pain. Examination showed the heart, lung, and kidneys normal, malarial organisms were not present in the

blood. Abdominal examination showed a severe involvement of the pelvic organs. The patient lived in a malarious district, the physician, without making any examination or eliciting any history, had come to the conclusion she had malaria. An abdominal section was made in this case and the woman is recovering. Had a proper examination been made early in the case, the woman would probably have been saved her serious condition.

There are treated at the out-department of the University of Pennsylvania many cases of chlorosis. Many of these cases have been diagnosticated phthisis, or heart cases, on account of the dyspnea, anemia, and general failure of health. Physical examinations in all these cases show the lungs normal, and the heart, in the condition that is constant in anemia, weak, with murmurs soft in character. Examination of the blood showed a marked reduction in hemoglobin, with little or no decrease in the number of corpuscles. If this blood examination, which is extremely easy, and should be used by all practitioners, had been made by the doctor first in charge, he would not have failed in his diagnosis.

There is no condition more easily diagnosticated than chlorosis, and no disease in which the proper treatment is followed by more brilliant results.

A physician brought his wife to St. Timothy's Hospital, by the advice of her doctors in Florida. They had diagnosed phthisis, and sent the patient North as a last resort. She was extremely emaciated, which was in reality the ground upon which a diagnosis of phthisis had been made. No careful physical examination had been made, and no examination of the sputum, careful or otherwise. The usual examinations showed all the organs absolutely normal, as the case was one of Weir Mitchell's hysteria cases, which do so well upon the rest treatment.

Not only should a careful examination of a case be made in the beginning, but the examinations should be repeated, in order that we may have an intelligent knowledge of the conditions.

The ill results consequent upon neglect to make regular examinations is well illustrated by the following cases:

The first case occurred in my own practice. I have always considered myself responsible for the unfortunate death. At least the approach of the end could have been easily foretold by even moderate care.

A colored woman (washerwoman) had a sharp attack of pneumonia. The lung never cleared up, tubercle bacilli appeared in the sputum. The case, however, became of fibroid type, and the woman

was in excellent condition. She was able to attend to her work and gave promise of a number of years' usefulness.

One night I was called to see the patient. She had been as well as usual during the day; in the evening she was sleepy and fell asleep while talking. About midnight I found her in convulsions. I catheterized her and found the urine almost solid with albumin and containing myriads of tube-casts. She died in twenty-four hours.

If I had done in this case as I invariably teach and usually practise, made a urinary examination at intervals and regularly, her death might have been foretold, and the horror of uremic convulsions probably averted.

Let me insist that a physical examination is not complete without a chemical and microscopical examination of the urine. The urine of every patient should be examined for albumin, for sugar, and for tube-casts.

Some years ago I tabulated the cases of unsuspected nephritis and glycosuria which had been discovered at the University of Pennsylvania Medical Dispensary, and was surprised at the great number occurring. In that institution the urine of every patient is examined. Never a week passes but that cases of nephritis are discovered, which are absolutely devoid of symptoms. The same is true of diabetes mellitus.

One case is especially fresh in my memory. A man of 40 applied for relief of pain in his index-finger and thumb. These were absolutely all the symptoms presented. The man was temperate, never had any specific disease, had no signs of anything except pain in his finger. A physical examination was made. His arteries were atheromatous, his heart dilated, the second aortic sound much accentuated. The urine showed a moderate amount of albumin, one-eighth by bulk, with numerous granular and hyaline casts. He was put upon antilithemic diet, was rested and given iodide of potassium. At the last examination no albumin, no casts, and the arterial tension was much decreased. Unquestionably this case was one which would have rapidly run on to an incurable nephritis, had not timely routine examination shown the true nature of the condition.

Recently a woman applied, complaining of a cough and of no other symptoms. Urine examinations showed 5 per cent. of sugar, which has persisted until the present time. These cases could be multiplied a hundred times.

The materials necessary for an intelligent understanding of the condition of the urine are test-tubes, nitric acid, Fehling's solution, a microscope, and, if possible, a centrifuge. A little use of these will

make you expert, and what is at first a bore will become rather a pleasure to you.

It is certain you will examine hundreds of cases and find them normal, where you will find one such case as I have quoted. But the practice seen in a large dispensary proves, without doubt, the wisdom of making a hundred examinations, and finding them normal rather than missing one case such as I have quoted.

In no condition is the necessity of the examination of urine so forcibly and disastrously illustrated as in pregnancy. In my district the routine examination of the urine of pregnant women is the exception rather than the rule. Yet the occurrence of puerperal eclampsia is far from rare. The examination of the urine every month in the beginning and every two weeks in the later term of pregnancy is an absolute necessity, in order to be aware of the danger of this frequent and fatal complication. To have a woman die of eclampsia, when the urine has not been regularly examined, is little less than criminal.

Lately I saw such a case as this. A child had a typical attack of croupous pneumonia including the crisis. After the crisis, however, the temperature gradually rose, and the child failed steadily instead of gaining, as she should have done. In spite of this, the doctor said, "Well, this is a case of pneumonia; this is just a little fever after the crisis," and made no careful examination. I saw her three weeks after the crisis. The most cursory examination discovered the chest full of pus. A thoracocentesis saved the child's life, but she was subjected to months of suffering needlessly.

A man was admitted to St. Mary's Hospital with what his doctor said was malaria; an examinatioin of his blood showed a typical Widal reaction. Twenty-four hours after his admission he had a severe intestinal hemorrhage. Careful examination of this case would certainly have caused the thoughtful physician to suspect typhoid; the presence of the Widal reaction would have made it certain.

A student at the University of Pennsylvania, in perfect health, one of the ball team, had a slight pulmonary hemorrhage, two years ago. Careful, repeated examination showed no physical signs, but examination of the sputum showed tubercle bacilli. He has been West for some time. I heard from him a few days ago. He says he is in perfect health. In this instance the presence of the bacilli in the sputum certainly saved the man's life, at least temporarily.

I could continue to cite such cases until you would tire, but these must suffice.

Remember, please, such cases do not occur alone in the practice of the dull and habitually careless, but in the work of the best men when they allow themselves to lapse for a day. The only possible

escape from such calamities is the continual practice of some such routine method as I have described. Go over every case, every organ in the individual, the urine always, and the blood when necessary.

It may be objected that to practise in such a manner is not possible. Time will not permit such a careful study of cases; that the income of the average physician demands that the number of his cases shall not be abbreviated by physical and urine examination in cases where there are no symptoms. Your own experience tells you that it is in just such cases to which such examinations are necessary. Let me remind you that we as physicians are dealing with life and death, and he who, when convinced of the necessity of a certain method, fails to carry it out, is not worthy the name of physician.

If what I have spoken of seems trite, and that which I have said should be suggested to beginners of medicine, remember that it is fundamental; that the majority of men miss their goal because of the failure to avail themselves of these small things, which together make a great whole. Remember that the old saying, "take care of the pennies and the dollars will take care of themselves," is applicable to medicine, in that attention to details, to the slight signs and symptoms which have to be sought for, will force the real condition upon your understanding.

NOTES UPON THE POSITION OF THE LOWER BORDER OF THE HEART AND THE TOPOGRAPHICAL ANATOMY OF THE ORGAN.[1]

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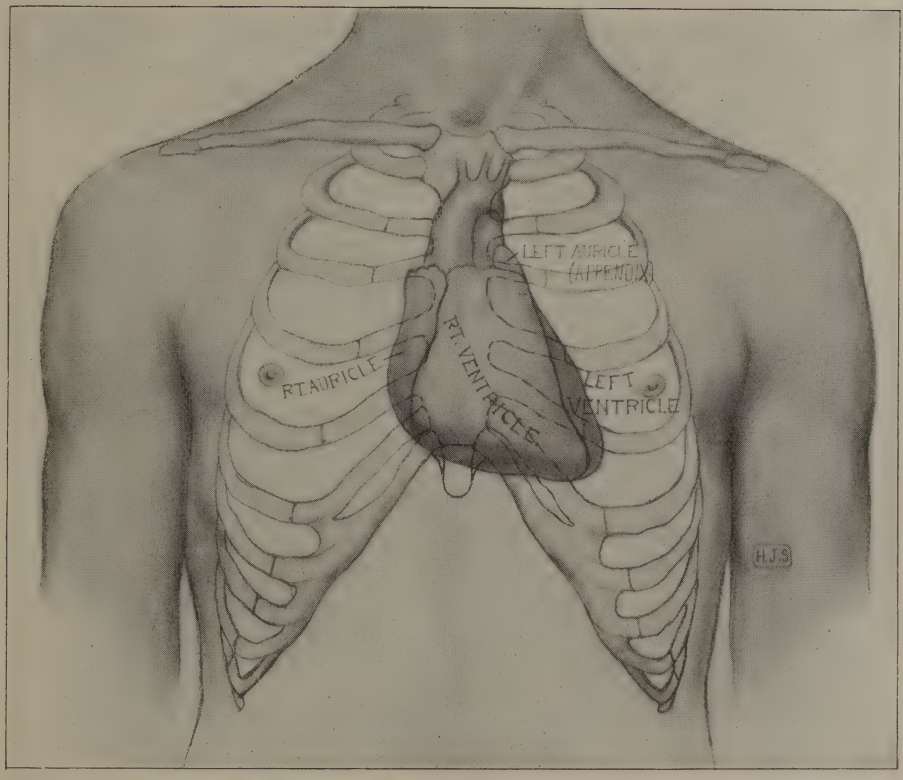
These brief notes relate to the topographical anatomy of the heart. Two points are to be considered: First, the position of the lower border of the heart; second, the relation of the anterior surface of the heart to the chest wall.

Note I.—The lower border of the heart is usually stated to lie above the junction of the sternum and xiphoid appendix, on a level with the sixth chondro-sternal articulation. There is good reason to believe that, while this statement is true for the cadaver, the lower border lies during life, in 70 per cent. of well-formed normal chests,

[1] Read before the American Climatological Association, August 31, 1898.



Position of the lower border of the heart and the topographical anatomy of the organ.

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at a lower point, this point being at least one-half inch below the sterno-xiphoid junction. This statement is based primarily, in point of time, upon the work done by Sibson two decades ago (Reynold's "System of Medicine," Vol. II). His opinion, with reference to the position of the lower border of the heart during life, is founded upon three considerations, derived from careful measurements in seventy-one bodies.

First, that at the time of death the heart is raised towards its higher points of attachment by the elevation of the diaphragm at the moment of the final expiration, so that an average space of half an inch is left between the lower border of the heart and the lower boundary of the front of the pericardium. This space is an exact measure of the post-mortem upward shrinking of the heart.

Secondly, it was found that there is a general correspondence between the relation of the lower border of the right ventricle to the end of the bony sternum, and also between the relation of the lower border of the apex to the lower edge of the fifth rib and cartilage. The lower edge of this rib was, in sixty out of seventy-one cases, an average distance of half an inch below the sterno-xiphoid junction. As the average dip of the lower border of the heart from right to left is also half an inch, it is obvious that, except in a few instances, the apex-beat could not be felt in the fifth interspace if the lower border of the heart lay above the end of the osseous sternum.

In the *third* place, the lower border of the right lung anteriorly, at the point where it overlaps the lower right border of the heart, is, in a majority of cases, on a level with the latter. The position of this portion of the border of the lung may therefore be taken as an index of the position of the lower border of the heart. It was found that in twenty out of twenty-nine cases the lower edge of that portion of the lung lay, on an average, one-half inch below the junction of the sternum and ensiform appendix.

The conclusions reached by Sibson are curiously confirmed by a comparison with fluoroscopic diagrams of the normal heart-relations, very kindly furnished, in a personal communication, by Dr. F. H. Williams, of Boston.

The arguments of Sibson and the revelations of the X-ray combine to place the lower border of the heart in a normal chest at a lower point than is generally stated; this point lying in most cases half an inch below the sterno-xiphoid articulation, about at the junction of the upper and middle thirds of the appendix. The clinical value of this fact is, perhaps, not very great, because of the acknowledged difficulty in determining the line of demarcation between heart and liver dulness.

NOTE II.—The second note is concerned with the relation of the parts of the anterior surface of the heart to the chest wall.

The best recent description of the surface anatomy of the heart is that of Keiller (*American Journal of the Medical Sciences*, April, 1898), based upon the models of His and his own gelatine-injected specimens. Keiller's description does not correspond with that usually given of the flattened empty heart as it lies upon the autopsy table, but its truthfulness appeals at once to the reader as affording a vastly more vivid conception of the form of the blood-distended, living heart. The present purpose will be fully subserved by describing the heart as a whole and the anterior surface in particular.

Instead of stating that the heart is conical or pear-shaped, with its base upward and to the right, it is in keeping with the facts to describe it as an irregular, four-sided pyramid. The base of the pyramid rests upon the diaphragm. Its apex is truncated, thus offering a place for the roots of the upspringing great vessels. It therefore possesses five surfaces, anterior, posterior, right, left, and inferior (the base), with well-defined borders separating them.

The anterior surface, which is more particularly under discussion, is triangular in shape, slightly curved, and lies parallel with the posterior surface of the sternum. It includes from right to left the whole right appendix and a part of the right auricle, the greater part of the right ventricle, and portions of the left appendix and left ventricle. It is separated from the right surface by the convex and nearly vertical right anterior border; from the inferior surface or true anatomical base, by the sharp, almost straight antero-inferior border; from the left surface by the convex, slightly rounded oblique left anterior border. The upper angle of the anterior surface is the anatomical apex, and merges into the anterior walls of the great arteries. The left anterior angle is the clinical apex.

The accompanying diagram is drawn in accordance with the facts just rehearsed, except that the right lower angle of the heart is rounded in correspondence with the findings of the fluoroscope. Owing to the normal anatomical and functional variations in the shape of the heart, and the considerable changes in its position resulting from respiratory action, bodily posture, and the shape of the thorax, no one diagram can tell the whole story. This diagram is believed to afford a reasonably accurate representation of the anatomical projection-outlines of the normal heart in a well-formed thorax during quiet respiration. In view of the desirability of correctness in illustration, a comparison with certain published drawings is sufficient and comment unnecessary.

SPONTANEOUS SUPPURATIVE OSTEOMYELITIS.[1]

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Since comparatively recent investigations have demonstrated beyond peradventure the infective origin of inflammation of bone, and clinical observation has located the primary seat of the trouble, the misty nomenclature of the older authors—such as myelitis, ostitis, and periostitis—has given way to the more "comprehensive term of osteomyelitis" (Warren), because, as pointed out by Senn and others, the primary seat of the lesion is in the medulla, and occurs without direct infection from without. The skeleton is comparatively rarely affected after it is fully developed. Again, suppurative periostitis is such a rare disease, except as a secondary complication. This same author concludes that osteomyelitis is the "most frequent of all inflammatory diseases of bone."

While it had long been held that traumatic osteomyelitis was infectious, the spontaneous variety was thought to be inflammatory till Leucke pronounced it infectious also. We owe in a large measure our knowledge of the cause of this disease to the untiring efforts of Rosenbach, who made the discovery of pyogenic cocci in the pus of patients suffering with this trouble. Rosenbach's studies of some fifteen cases showed the presence of the staphylococcus fourteen times, and of the streptococcus once. He substantiated his observations by experiments upon rabbits. He found by injecting into rabbits the pyogenic cocci and then bruising or fracturing their bones he produced typical cases of osteomyelitis. Rosenbach has since been corroborated by Kocher, Passet, Krause, Kraske, and others.

Ulmann, according to Warren, was unable to produce osteomyelitis in animals by injections of the pyogenic cocci, unless he previously injured their bones. On the other hand, Krause, according to Senn, found that, by injecting into the veins a pure culture of the staphylococcus albus and aureus, he could produce suppuration in the joints and muscles without previous injury. This coincides with Rodet, who found the suppuration circumscribed near the epiphysis, rarely involving the shaft for any distance.

The weight of opinion of observers seems to give to the staphy-

[1] Read before the Knox County Medical Society, September 8, 1898.

lococcus albus the honor of producing osteomyelitis, though Kraske, in two out of five cases, found a pure culture of the aureus (Warren). However, he found in three cases numerous organisms. This led Warren to conclude that this mixed infection of several kinds of bacteria occurred in the more malignant type of osteomyelitis.

Again, there are observers, such as Courmont and Jaboulay, who hold this disease to be due to both the staphylococcus and the streptococcus. The staphylococcus attacks the juxta-epiphyseal regions, producing a periostitis with necrosis, and sometimes inflammation of the joint. Whereas, the streptococcus attacks the medullary cavity usually near the juxta-epiphyseal line, and produces a more diffuse suppuration (Warren).

Pathological Anatomy.—It is essentially a phlegmonous inflammation of the medulla of the bone. In the large majority of cases the disease attacks the long bones, and has such a strong affinity for their extremities that this region is called by Ollier the zone of election of pathological processes (Warren). However, the flat bones may also be attacked.

The anatomy of the ends of growing long bones and the reason that bacteria so often show an elective tendency to develop in this region are so admirably described in Warren's "Principles of Surgery" that I make no apology for appending it entire.

"Near the epiphyseal cartilage, which separates the diaphysis or shaft from the epiphysis, there exists in growing bones a newly formed spongy tissue, very vascular, and connected with the cartilage by a spongy layer of tissue which is not yet bone, but which does not possess a cartilaginous structure. It is in this portion of the organ that the most active changes take place during the period of growth. The medullary substance is very vascular; at this point it is red and without fatty tissue. It communicates with the medullary canal and with the periosteum by a number of vascular channels. The epiphyseal cartilage itself is intimately blended with the periosteum. The diaphyseal side of the cartilage produces much more bone than is found on its epiphyseal margin. There is also an active growth of bone in the periosteum, and it is in these regions and in the medullary canal that the inflammatory processes originate." The disease generally begins in the epiphysis opposite to that towards which the nutrient artery is directed, except in the case of the tibia.

It is for this reason that the pus microbes circulating in the blood find a suitable nidus in the extremities of the long bones, which are reduced below par by reason of a frail constitution, owing to a *locus minoris resistentiæ* in the delicate structures of the extremities of growing bones, incident to some of the exanthemata or a previous cold,

causing congestion and "mural implantation of infected leucocytes." According to Warren, the compact bone is never primarily affected. On the other hand, if the disease is situated in the so-called joint region, we have what authors speak of as epiphyseal osteomyelitis. There is a primary localization of the microbes between the epiphysis and articular cartilage. Here you have the disease spreading towards the articulation, filling the joint with pus, both mystifying the surgeon and adding to the gravity of the case.

The causes of spontaneous osteomyelitis are predisposing and exciting. The predisposing causes are unfavorable hygienic surroundings, bad food, poor clothing, or anything enfeebling the constitution, as typhoid fever, measles, scarlatina, diphtheria, etc.

The exciting causes are more often of a trivial nature, such as a kick or a slight sprain, and, as in our case, a twist of the arm from carrying a pail of milk; or it may follow chilling of the body from becoming wet or sitting on the damp ground.

A child retires at night—after playing around all day—feeling perfectly well, is awakened with a severe pain in its limb, high fever, rapid pulse, great thirst, and nausea; or a chill, amounting to a rigor, may indicate an impending suppuration; "the spleen may be enlarged and hemorrhagic exudates are often found in the serous cavities."

According to Senn, in multiple osteomyelitis, the symptoms are severe from the beginning, indicating profound "septic intoxication," simulating the typhoid state, such as low muttering delirium, dry tongue, diarrhea, continued fever, and rapid pulse. Such a patient may die within a week. Indeed, such a set of symptoms has been mistaken for typhoid fever. Hence the term "bone typhoid" of some authors.

Again, it so closely simulates acute inflammatory rheumatism that, until the cardinal features of the disease become more frank, it will baffle the skill of clinicians of the widest possible experience to differentiate.

The *portio invasionis* may be through the respiratory apparatus, following a cold; the primæ viæ, following tonsillitis; catarrh of the stomach or intestines. Again, the infection atrium may follow a slight contusion of the skin, such as a small furuncle, etc.

The pain, which is such a prominent symptom, comes early and persists. It is intense, and is described as of a boring, tearing, lancinating character. It is not always local. It may be diffuse, involving the joint and a considerable part of the bone. When it suddenly ceases, it is an indication that the bone is perforated and the periosteal tissues are invaded,—*the periostitis of the older authors.*

The swelling which takes place rarely shows itself before the end

of the first week, or during the second week. It may rapidly diffuse itself as the pus dissects its way into the surrounding soft parts.

In this way, as the pus approaches the surface, the tenderness caused by the secondary periostitis enables the surgeon to locate the "primary focus in the bone." This secondary periostitis often causes extensive denudation of the bone, as the pus dissects its way upward and downward along the diaphysis.

The color of the affected parts, at first pale or normal, gradually presents a red-brownish discoloration. When the pus reaches towards the surface, the superficial veins stand out in bold relief, "indicating deep-seated thrombo-phlebitis." The pus, when discharged, may be a pale straw color, thin or normal in character; or, again, it may be foul smelling.

Complications.—Occasionally there is found a bipolar ostitis, both juxta-epiphyseal regions being affected simultaneously. The lungs may be the seat of fat-embolism; if so, it occurs early in the disease. Later, pneumonia, caused by infected emboli, may develop. Metastatic deposits may take place in the liver, kidney, and spleen. Ulcerative endocarditis may be caused by bacteria attaching themselves to the delicate endothelium. Pyemia is sometimes seen as a complication, especially in old and feeble people who have had a previous attack, and as often happens in multiple osteomyelitis. Sometimes, when near a joint, the articular circulation may be so disturbed as to give rise to a catarrhal synovitis, with an effusion of serum and a loss of function; this gradually disappears on the subsidence of the inflammation. But should the pus microbes invade the joint,—as is sometimes the case when the disease is of such a nature as to destroy the articular cartilage,—there is a collection of pus, necessitating opening the joint combined with thorough drainage.

Epiphyseolysis, or separation of the epiphysis from the shaft, is due to necrosis of the bone towards its epiphyseal end. Loss of function with dislocation is a frequent complication. The most frequent sequelæ of osteomyelitis is necrosis, and if considerable and the accompanying involucrum is insufficient in amount, may result in spontaneous fracture.

The diagnosis of this affection is not always easy. Very often it is mistaken for acute inflammatory rheumatism. The sudden onset, severe bone pain, and high fever tending to mislead.

Again, the symptoms are so nearly akin to typhoid fever that it is almost impossible to distinguish the difference during life. Such a case of osteomyelitis, presenting all the clinical symptoms of typhoid even to the tympanites, has been reported, that a necropsy alone revealed the true character of the lesion. However, the boring nature

of the pain, the disinclination of the patient to move the limb, accompanied by swelling and tenderness in the region of the joint at the close of the first and during the second week, should arouse our suspicion. In fact, this is regarded by Senn as a diagnostic feature of the greatest possible importance.

The appearance of fat globules in the pus was at one time thought to be pathognomonic; but more recent investigations have found fat globules in phlegmonous inflammation also. Again, in phlegmon the swelling is early and more diffuse.

While osteomyelitis is in most cases limited to growing long bones, it may attack the short bones, such as the tarsal and carpal, and then be mistaken for tuberculosis. Tuberculous inflammation, however, is of a chronic type, while pyogenic inflammation is always acute.

Prognosis.—As the large majority of these patients recover, the prognosis as regards life is in the main favorable. On the other hand, osteomyelitis may terminate disastrously in the first or second week from profound septic poisoning. Should infective emboli break away and form metastatic deposits in distant organs, as is indicated by repeated chills, recurring fever, and profuse sweats, the patient may succumb to all the horrors of a pyemia. Again, a fat embolism may form in the lungs, causing death. The more nearly the symptoms resemble typhoid fever the more grave the prognosis. The appearance of decubitus is unfavorable, as is also the multiple variety.

Treatment.—The *indicatio rationalis* is to evacuate the pus, give free drainage, and prevent wide-spread destruction of the tissues. This should be done as soon as the trouble is diagnosed, whether by one large or by multiple small openings, as some surgeons advise. Keeping in view, however, whatever method used, the main purpose, to locate the focus of infection and remove the dead bone and drain. I doubt if, in the wide domain of the healing art, any disease so appeals to the specialty of surgery and so jeopardizes the attendant's reputation as osteomyelitis and its complications. The extensive thrombo-phlebitis, the rapid and wide-spread destruction of bone, the secondary suppurative periostitis with its accompanying phlegmon, are all entirely surgical. The following patients, on whom I operated for necrosis following osteomyelitis, had the disease, one in a long bone, the other—quite rare—in a flat bone.

The first case occurred in a lad, aged 6 or 7 years, who was sent to me by Dr. Donaldson, and who illustrates to perfection a typical attack of osteomyelitis, simulating in such a marked degree the onset of an acute inflammatory rheumatism that I take the liberty to quote Dr. Donaldson's letter verbatim.

"I first saw the lad on the 28th day of April, 1896. He had been complaining of his arm hurting him for about a week. It was not very sensitive, was not swollen, and was not hot. The bone was not enlarged at that time, as far as I could observe. I thought, perhaps, he had hurt his arm. But there was no history of injury, except he had been carrying heavy loads of water and milk from the spring. I thought it might be rheumatism, and gave him salicylate of soda. He got no better, so on the 30th I discontinued the salicylate and gave him syrup of the iodide of iron. On the 12th of May his arm began to swell and was very tender. By the 15th of May his whole arm and shoulder were enormously swollen. His arm was at least three times its natural size. He also had considerable fever. The pain was so severe I had to give him opiates to keep him easy. On the 23d of May I lanced the arm. There was a discharge of a very large amount of thin straw-colored pus. It continued to discharge for three or four weeks, and then almost completely healed. At this time I observed the bone greatly enlarged, and advised an operation."

Now, I doubt if you can find a more typical clinical picture of spontaneous osteomyelitis recorded than the one treated by Dr. Donaldson. On July 17, 1896, assisted by Dr. C. Deadrick, I made a bloodless operation, dividing the soft tissues down to the bone along the entire outer surface of the arm.

The bone was enlarged and had a worm-eaten appearance, was quite thin, crackling like an egg-shell. With a Volkmann's spoon I removed all the diaphysis, except a small strip the size of a lead-pencil, at the posterior surface, even laying open the shoulder-joint, for the disease had invaded this joint, leaving the elbow-joint, however, intact. After thorough cleansing and leaving a strip of iodoform gauze for drainage, I closed up the wound, placing the limb on a wire splint, lest the bone should be fractured.

The wound healed slowly in places only, leaving the extensors of the hand and wrist paralyzed.

September 8 I again operated, making a second incision like the first, cleansing away all diseased tissue, even into the shoulder-joint. Thinking I had divided the musculo-spiral nerve during the first sitting, I looked for its divided ends in the soft tissue, but failed to find them. At this operation I left the wound open, packing with iodoform gauze so it might heal from the bottom. On the fourth day a profuse hemorrhage set in from the superior profunda artery. This hemorrhage was kept up at intervals for several days. This I controlled by packing with iodoform gauze and elevating the arm. The tendency to hemorrhage ceased, the wound healed slowly, the wrist-drop gradually disappeared, leaving the lad a useful arm to this day.

This is the surest and most radical method of dealing with this disease. In fact, it is the completed operation; for it removes the focus of infection, relieves the pain, stops the necrosis, the progressive sepsis, and diminishes the liability to pyemia.

Other methods, such as counter-irritation and injections of antiseptics, have been advised; but I doubt if they have any influence on the disease. Ice-bags or hot applications may palliate at the beginning, acting also to some extent as a placebo. Of course, the surgeon is not to neglect the constitutional treatment of his patient. For often they need good nourishing food, plenty of fresh air, good hygienic surroundings, and tonics. Should pyemic symptoms arise, quinine in heroic doses, with large quantities of whiskey, is indicated.

Again, if there is much destruction of bone, as in the removal of a tumor, leaving a cavity, Schede's blood-clot, or Senn's decalcified bone-chips have proved of value in the hands of surgeons. Some surgeons recommend turning in flaps of skin over the surface of the destroyed bone, while others have loosened fragments of bone with their attached periosteum into the cavities. All these different methods have the same purpose in view,—that is, to serve as a scaffold for the new granulation tissue thrown out. In my opinion a better method than either the blood-clot or bone-chips in operations, where there is much destruction of bone with formation of cavities, is to insert fragments of surgeons' sponge (sponge grafts) rendered thoroughly aseptic. Of course, the cavities must be perfectly free of all extraneous matter, such as blood-clots, *débris*, etc. All oozing must be stopped and thorough irrigation practised. The sponge affords an excellent framework for the delicate granulation tissue. Should all those methods fail, the surgeon may then be called upon to do an amputation.

The second patient, sent to me by Dr. Catron, of Sevierville, is unique, in that the disease attacked a flat bone. The onset followed chilling of the body, incident to exposing the bare feet in snow, and the infection atrium was through a decayed tooth.

The history of the case is as follows: William Clark, a lad aged 8 years; has a good family history; so, too, is his personal history good, up to the time of the attack. In March, 1897, according to his mother, after returning from school one day, he pulled off his shoes and waded in the snow, the weather being bitter cold. That night he complained of a violent toothache in the first molar, on the right side of the mandible. His jaw swelled. The gum was lanced, and the offending tooth drawn; but to no purpose. The swelling continued till the right side of his face and entire neck, as far as the clavicle, were swollen. The attending physician lanced the swelling

on the outside, in front of the angle, also beneath the lower border of the mandible. Pus poured out of the opening.

September 13. When I first saw him the swelling, according to his mother, had not diminished from what it was at first. On pressure, pus ran out of the opening below the mandible and from the socket of the first molar.

September 14, assisted by Drs. Nash and Delpeuch, I operated by cutting away the mucous membrane from the gum, enlarging the external opening and removing that part of the ramus running from the angle to the condyle, the second molar tooth, the incipient wisdom-tooth, and alveolus as far as the bicuspids. Washing out the wound and packing with iodoform gauze, I treated him daily with antiseptic irrigation and iodoform packs for some time, when he passed from under my observation.

EXTERNAL ROTATION OF THE LEFT EYE, OF THIRTY YEARS' STANDING, FOLLOWING OPERATION FOR INTERNAL SQUINT.

By J. Winter Wamsley, M.D.,

PHILADELPHIA.

A musician, aged 53 years, came to have his left eye straightened. Vision, O. D., 20/20; O. S., 20/50; ophthalmoscopic examination negative in both eyes; pupils normal in size and reaction to light. The right eye has complete normal movement in all directions; the left eye was turned out so that the outer margin of the cornea met the external canthus; the upper and lower movements of the left eye were normal, but the patient could with difficulty draw the eye in about two millimetres. He depended on his right eye for all purposes of sight; binocular vision was impossible. The history of the case is that thirty years ago his eyes were crossed, and operation was performed at the time in Italy by a district physician, and shortly after the operation the eyeball turned out, and so remained. The patient had experienced no diplopia for years, the eyeball being turned so far away from the central field. The patient's health was good, and his ocular conditions normal, excepting the needed refraction of the left eye and its convergence.

I advised operation, and first, with refraction without mydriatic, distance, O. D., sph. + 1.00, 20/20; O. S., sph. + 2.00, cyl. + 1.00

ax. 120°, 20/30. A memorandum of the refraction was made before the operation. Critchett's operation was selected as the best means of straightening the flagging eyeball, the subjective symptoms suggesting atrophy and retraction of the internal rectus muscle, there being so little power antagonistic to the external muscle. A faint cicatricial mark on the conjunctiva could be discerned over the site of the original operation. Cocaine, in 4-per-cent. solution, was used for local anesthesia. The eyelids were separated by an ophthalmostat, the conjunctiva grasped, and cut with scissors over the tendinous attachment of the external rectus muscle; a medium-sized strabismus hook was inserted and the tendon drawn up and incised; the hook was reintroduced to free all muscular attachments, the conjunctiva was allowed to remain without stitching, as it would probably retract too much from the internal shortening. It was found, since the operation, that it would have been better had this part of the operation been done last, and as a secondary operation, if it had been necessary, as the external muscle was found to be very little developed, probably from its long disuse.

The important part of drawing in the eyeball was done in regular order, the conjunctiva grasped deep with rat-toothed forceps, and so as to include any muscular remains of the internal rectus, and cut with scissors in a vertical incision as high and as low as a line drawn parallel along the upper and lower border of the cornea, the vertical incision being about three millimetres from the cornea; the released tissue was held and the scissors passed into the opening thus made, and all atrophied muscular and fibrous attachments dissected off, keeping close to the eyeball. This was continued quite deep about the globe, a Princess forceps was used to grasp the inner flap, and silk sutures passed well beneath and in its central portion on a line with the centre of the cornea, then carried to the corneal edge of the conjunctiva, two more sutures were used, one above and one below the central one; and in the same way carried to the corneal portion of the conjunctiva. The central deep suture is the key-note of success where an operation of this kind is selected for the above-stated conditions, a direct guide is obtained by this means as to how much advancement will be necessary without relying on too much or too little after contractions. The middle suture was drawn together the desired amount and tied, then the remaining upper and lower sutures, the free ends being cut. A flap of tissue was removed in front of the sutures after they were brought together and after the approximate traction. No apparent widening took place in the conjunctiva over the external rectus from the globe being drawn in. Irrigation of the wound and conjunctival sac followed, as was also

done previous to the operation; the eye was bandaged, allowing the use of the right eye during healing. From day to day the eye was dressed, which consisted only of irrigation with boric acid solution and a fresh pad and bandage. Within a week the sutures were removed, the upper and lower ones being removed first, allowing the central one to remain a few days longer. No granulations developed in the wound, which in consequence needed no applications of caustics. Healing was rapid. After the bandage was removed entirely the patient had to wear an eye-shade over the left eye as great annoyance was manifest from diplopia, particularly on near vision, as in reading his music. He was instructed to disuse the eye-shade for distance as much as possible, and in a very short time the annoyance for distance passed away; then confusion existed only for reading. The patient was again refracted, with the same results as previous to operation, each eye singly, but with both eyes under test of Maddox's rod, an uncertain esophoria of about 10 degrees would take place, and on the least change in position of the head his eyes would change, and direct binocular vision occurred. A left hypophoria of 4 degrees was corrected. This was absolute. The combination was prescribed in reading-glasses with the addition of sph. + 1.25 for each eye, and at eighteen inches no great inconvenience was experienced from double images; at eight inches the patient could not use binocular vision without great inconvenience from diplopia; the internal rectus would not act further. The same condition took place if the eyes followed an object more than 30 degrees to the right, and about 45 degrees to the left.

At the present time enough muscular development exists to give the patient fair binocular comfort, for both distance and near.

As has been stated above, it would have been better to let the first part of the operation remain until the last. It is probable that thus more external motion would have been present with the same power of internal rotation: the eye is fairly well balanced as it is, rotation being about equal internally and externally. Then, again, had the external muscle remained intact, the chances are that it would have had the same limit of external rotation, which in great part is due to removal of the internal flap of the conjunctiva and subtissue, until by long-continued use it would have caused slight internal stretching, allowing the globe a little more room to travel. The inability of the eye to turn in is all due to the wasting or poor development of the internal rectus muscle.

It is rather interesting how well the vision was preserved in the left eye after being so long, comparatively, out of use,—thirty years. The slight amblyopia which existed previous to operation has at present

writing much improved from the effect of binocular vision. This case of long-standing external strabismus is to be separated from the category of alternating or monocular divergent squints, due to congenital or hereditary myopia, and the concomitant strain producing a weakness of the internal recti muscles, which are not sufficiently strong to maintain the requisite degree of convergence, and, lastly, from those cases of paralysis of the third nerve, its dilated pupil, and paralysis of accommodation.

MEMORANDUM.

APPENDICITIS BELONGS TO THE SURGEON.

On September 17, 1898, I saw a woman, 33 years old, from Buffalo, who had had several attacks "like the one she was then having." She had been sick three days. Her temperature was 103° F., pulse 120, eyes greatly sunken, persistent vomiting,—not fecal,—no pain, bowels moving only by enema. This apparent collapse was due to the exhaustive vomiting. Under nitro-glycerin and strychnine she revived. On September 18 there was no fever, pulse 72, temperature 99°. Evidently no pus had yet formed at this stage, and the treatment must have been as good as could be employed, for the fever was controlled. On September 19 no fever, vomiting still continues, but less troublesome. On September 20, 21, and 22 no fever, no vomiting. On September 23 suddenly stricken with great pain located over the stomach, no swelling apparent; relieved by enema and hypodermic injection; temperature 101.5°, pulse 96. On September 24 temperature 102°, pulse 100, tympanitic abdomen, some diffused pain, no vomiting. On September 25 and 26 fever continued the same, tympanites also, little vomiting. Suddenly, on the 27th, the patient is taken with great pain, bowels failed to move by enema, one fecal vomiting, sudden collapse, perspiration, and death.

In this case a consultation was refused, and the greatest disinclination shown to any operation. It teaches me the futility of attempting to treat a case of appendicitis without surgical interference. I know exactly what both sides—physicians and surgeons—have to say on the question as to who is best fitted to direct the treatment of this disease, and I am convinced that the disease belongs to surgery, and that the physician who fails to turn his case to the surgeon, *as soon as he makes his diagnosis*, no matter how strong the resistance of

the family may be, is *criminally* negligent. He should not wait, in my opinion, on temperature, McBurney's point, or anything of that kind. On this occasion, for several days, I was deceived, by the absence of fever and vomiting, into believing that I had control of the case.

Albert S. Ashmead, M.D.

New York.

ALUMNI NOTES.

Provost Harrison's Address at the Opening of the Departments of Medicine, Dentistry, and Veterinary Medicine.

Gentlemen,—I need hardly repeat, in very formal terms, the heartfelt welcome with which the Faculties of Medicine, Dentistry, and Veterinary Medicine greet the students of these University Departments and allied schools, at the beginning of a new academic year. As the sole professional object—outside of his own personal growth—of each member of these Faculties is the service which he may render to you, through the instrumentalities which the University furnishes, and through his own increase in ability as a scientific man and as a teacher, we may speak to you with more certainty and expectation, if we may feel that the University is doing its part, and that each one of its teachers is doing his part, towards the fulfilment of the serious duty which is owing to each one of our students. Not only every student, but every professor in the University, must appear before the forum of his own conscience, as well as before the judgment of his fellows, to ascertain how far this great obligation has been duly rendered. The University itself, as a great living—if intangible—force, is certainly able to say that if it may not realize all its purposes as rapidly as those who watch over it so eagerly long for and desire, it yet makes every year significant progress in the interest of all those who come to its halls. It has entered upon a career, caring not so much for numbers—whether in these or in other departments—as for the character and quality of the student graduated. We may not expect an increase—we rather look for some decrease—in the number of our students, upon the plans which we have laid out for ourselves. That we shall win in the end, not only in the standing of the men who will receive our diploma, but in the respect and confidence of the community, and at the last, in very great increase in numbers, is to my

mind entirely sure. Therefore, the increasing requirements in our entrance examinations, both here and elsewhere; the absolute impartiality of the treatment which each student will receive in his term-marks, and the honesty of the exit examination, are to be without a flaw, so far as human intention and fairness are concerned.

That these purposes are already respected and encouraged by this community is evidenced by the fact that during the past four years more contributions in money—if that may be taken as an evidence—have been received and expended here than in the whole 140 years of the University's previous history. The successful and useful result of this intention to disregard numbers and to work for the highest good of the individual student comes out, from time to time, in many interesting ways. For example, it is an arithmetical fact, and an analysis of the recent examination before the State Board of Medical Examiners of Pennsylvania shows that but one student, graduated from the Department of Medicine of the University of Pennsylvania, failed to pass the examination of the State Medical Examining Board, and as ninety-three University of Pennsylvania men presented themselves this means a percentage of rejection of less than one. Further, the general average of the whole body of the ninety-three students examined was so much higher than that of any others who presented themselves as to stand in a class entirely by itself.

Gentlemen, I have referred within a few days—at the opening of the College Department—to the unusual conditions which surround us upon this occasion, and to no body of men are many of these circumstances more interesting than to yourselves. I need not go into the question of the conduct of the war. Every one knows that to the friends of those who have been in the service of the government, disease has had its terrors far in excess of death or wound in battle. The lessons to be learned, and which will be learned, have only been branded into us with suffering and anxiety for those for whom we have not learned these lessons in time to be of service. But there is one great fact to which I want to call your attention, and one which I do not think the public has generally observed. It is a fact important not only as having a bearing on health, but important as being a witness to the debt which the civilized world owes to the universities of the world in the responsibility assumed by them, and practically committed to them for the conditions of life, as far as health and immunity from disease are concerned. Will any one say that ever in the history of the world there has been done what has just been done in these United States of America; that the army of the United States, at Santiago de Cuba, one of the fever-infected ports of the world—the army itself being infected with contagious disease in several forms

—has been bodily brought from Santiago de Cuba to a point in juxtaposition to one of the most thickly settled centres of population in the world, and from there dispersed to every part of this country,—with entire safety and immunity? Is not this to be considered a greater triumph than any one of the victories of the war? What great and generous response may we not expect from a grateful nation, not only for what the hospitals have done, and notably the hospital of the University of Pennsylvania, but for what has been done through the advancement of knowledge, to have accomplished such an epoch in human history as that which I now wish to record.

Gentlemen, I wish to refer, for a few moments, to matters which more immediately concern our home circle. Since the close of the last session the University has sustained a serious loss in the death of Dr. William Pepper, professor of the Theory and Practice of Medicine, who for a number of years held also the Provostship of the University, and in many ways did much to promote its prosperity. This is not the time or place in which to allude to Dr. Pepper's labors as the Provost of the University. I will here only speak of his brilliant career as a practitioner and teacher of medicine. An alumnus of this department, he displayed from the outset a decided talent, especially as a diagnostician, and this he developed by the closest attention and diligent study in the Pennsylvania Hospital; afterwards in our own, and in the large private and consulting practice which he gradually but surely built up. Clear in his conceptions, and with an admirable skill in giving verbal expression to his thoughts, he became a rarely effective lecturer and clinical instructor, and his large classes followed with pleasure and profit his teaching in this important chair. I call your attention to the illustrious men who have occupied the chair of the Theory and Practice of Medicine since 1765,—namely, Morgan, Kuhn, Rush, Chapman, Wood, the elder Pepper, and Stillé.

In addition to this University loss, through the death of Dr. Pepper, the Department of Medicine and the University itself are called upon to endure the shock of the death of two of our number who have given up their lives, since Commencement Day, in the service of their country. We all desire to recognize the high personal character and professional ability of Dr. Lawrence S. Smith, instructor in Clinical Gynecology. Dr. Smith served as surgeon of the First Regiment Pennsylvania Volunteers. He was taken down with fever in Porto Rico, and died on the steamship "Relief" while on his way home.

Professors and students of all departments will long remember Mr. John B. Scott, a third-year student in medicine and the president of the Houston Club. He, also, died through disease contracted

while in the service of the government. If there was one quality which distinguished him above his fellows, it was that great purpose of his life to serve every student of the University in need of moral help. These are no perfunctory words of speaking nothing but good of those who are deceased; but they are words of truth and soberness, when I so speak of Dr. Lawrence S. Smith and Mr. John B. Scott.

Not only has death been conspicuously busy in this professional school, but grave and serious illness has not omitted its ministration. Though slowly recovering from his attack, the senior professor in Surgery of the Medical Faculty, Dr. John Ashhurst, Jr., still lies at his home, after two months of helplessness, unable to be with us to-day except in thought. Our expressions of confidence, of respect and sympathy have already gone out to him, and again go out to him to-day, from one and all of us, with our heartfelt wishes for a due restoration to health and to his presence again among us as of old.

Gentlemen of the Medical Department: It will not do to speak of the University's purpose to disregard numbers, but to look solely to the character and quality of the student graduated, and omit the expression of its intention to provide every scientific and literary opportunity for the medical students of this University. I have already said, more than once, that when I entered the service of the University it was with the clear apprehension upon my part that several years must elapse before I could undertake the question of the highest and best equipment for the Medical School. Many other departments needed immediate care. The daily life of the students of the University had to be provided for through Houston Hall and through the dormitories. It was necessary to fulfil many obligations of the University to its dental students, who had no home of their own; to its students of law, who have also hitherto been without a law-school building, and in many other ways to make such quick provision for immediate University requirements, that it is only now that I have been able to feel free to give the major part of my time to the interests of the Department of Medicine. I am able to announce to-day that the first great question to which the Trustees of the University will direct their attention will be the erection of new medical laboratories. I do not mean a postponed consideration of the question, but an immediate one, so that just as soon as the plans may be most carefully and thoroughly studied and matured we will proceed to the erection of great medical laboratories for the strictly "medical" laboratory work, —that in pathology, physiology, and pharmacology; laboratories, I mean, of sufficient size to give room for individual student work in our large classes and such other room as may be needed for the prosecution of research work by our professors and graduate students. Such

a building will have to be fully equipped with the most modern apparatus for individual work. This may seem to be a large demand, but it is one which is now to be filled. Certainly, with the high credit which our Medical Department has had; with its noble history; with the thousands of graduates who represent it in every corner of the land; with the great public influence which they have, the provision of this great need for the Medical Department is to be a pleasant and happy task.

Indeed, gentlemen, it only needs the same spirit to animate us in our University work which has animated all those who have had great causes at heart, and have accomplished, because they have had them at heart. A few days ago I read in a London journal a review of the work of John Hunter, written by Stephen Paget, and it seemed to me that if we could, one and all, be stimulated by the same spirit which animated him, there is nothing in connection with medical education, investigation, and research at the University of Pennsylvania which we could not accomplish; his whole heart and soul were in his profession. "He worked incessantly, and allowed no suffering of his own to abate his endeavors. The more that ignorance and hostility sought to baffle him, the harder he worked. To lose any opportunity for useful experiment was to him nothing short of a crime. Upon one occasion, where a man had died of an obscure disease, he sought most earnestly to get permission to make a post-mortem examination." No influence or persuasion of his could remove the objections of the relative whose consent was needed, and when at length he was finally defeated in his purpose, he retorted with all the vigor of his nature, "Well, I hope that you and your family and all your friends will die of the same disease and that there will be nobody at hand to bring you relief."

We admit that professional zeal seemed in this case to overbear the charity that "endureth all things;" but we must remember that this zeal was for a grander charity, that strove and hoped for means to avert this suffering and death from all who were in peril of it.

So, gentlemen, let us each, in his proper sphere, take up bravely, seriously, hopefully, the work of the session that begins to-day. I have my task before me; each of you have yours. And may we all so do our part, and the Divine blessing so rest upon our doings, that when the session ends we may thankfully look back and feel that it was indeed fruitful, both for ourselves and our Alma Mater.

The Presentation of a Portrait of Dr. Pepper.

The University library has been presented with a large portrait of the late Dr. William Pepper by J. J. Rosengarten, one of the trustees

of the University. It has been hung in front of the Pepper alcove in the reading-rooms of the library.

Appointment.

Dr. William H. Bell, of Milwaukee, of the Class of '97, has been appointed assistant surgeon in the United States navy, and has been assigned to duty at the Naval Hospital, Philadelphia.

Necrology.

Dr. Charles A. Voorhees died in Philadelphia, September 27, 1898. Dr. Voorhees was born in Hunterdon County, N. J., in 1835, and was graduated from the Medical Department of the University of Pennsylvania in 1861. In 1862 he received an appointment as surgeon in the Union Army, but was unable to serve on account of ill health. Dr. Voorhees was chief of the staff of visiting physicians to the Masonic Home, Philadelphia.

Dr. William Pratt Read died in Philadelphia, October 8, 1898. Dr. Read was graduated from Princeton College in 1868, and from the Medical Department of the University of Pennsylvania in 1871.

The Prejudice against the Tomato.

The tomato alarmists are at their old tricks again. Dr. Andrew Wilson, of London, says: "I have received several letters of late, reiterating a question I might well be tired of answering, 'Do tomatoes cause cancer?' But for the fact that one takes a pleasure in stamping one's foot on a misleading statement calculated to prejudice people against a vegetable food which is entirely healthy and safe, I should grow weary of asserting that not a jot or tittle of proof has ever been offered in support of the outrageous statement noted above. One might as well allege that cabbage causes cancer, for there would be no more proof of that assertion than there is proof to be had concerning the tomato myth. I can only repeat that the tomato is an excellent vegetable enough, and may be partaken of by those with whom it agrees, without any fear of its vitiating any disease whatever." —*Medical Record.*

EDITORIAL.

THE INFLUENCE OF MICRO-ORGANISMS AND THEIR TOXINS IN THE PRODUCTION OF DISEASES OF THE NERVOUS SYSTEM.

An interesting discussion on the influence of micro-organisms in the production of diseases of the nervous system was held before the section of neurology at the last meeting of the British Medical Association. While nothing especially new was brought forward, the remarks were highly suggestive, and will doubtless stimulate a more critical inquiry into the etiology of this class of diseases.

Dr. Buzzard, in opening the discussion, remarked that only in tetanus and diphtherial paralysis did the evidence in favor of bacterial infection attain completeness. In each of these conditions four conditions were observed: (1) A wound or surface favorable for the reception of a micro-organism; (2) the actual presence of the bacillus, usually confined to the wound or favoring soil, as the case may be; (3) evidence of the presence of chemical products associated with the growth of the organisms and acting as toxins; (4) diphtherial paralysis has practically been shown by Sidney Martin to be dependent upon chemical substances, the product of the growth of a bacillus in the characteristic membrane; whilst tetanic spasms resulting in death have been found by various observers to result from the infection of mice of bacteria-free filtrates of pure cultures of the tetanus bacillus. In epidemic cerebro-spinal fever the micro-organism is known, but its mode of entry of the organism is not apparent. In syphilis, on the other hand, the method of entry by a breach of continuity is certain and inferentially the presence of a toxin practically indisputable, but the association of a specific organism with the disease has not yet been unquestionably demonstrated.

There is a growing impression that infantile paralysis is the result of infection, but how the latter is introduced there is no evidence to show. The fact that infantile paralysis is nearly always sporadic has been adduced as an argument against an infectious origin, but other diseases indisputably infectious, such as cerebro-spinal meningitis, are frequently sporadic. Moreover, the occurrence of two or more

cases coincidently has not been so rare as at first sight would appear. Dr. Buzzard stated that in the last three years he had met with three examples, which appeared to point to coincidence of seizure. In one instance, a boy was attacked two days after his sister; in another, two girls in the same family were attacked a fortnight after a child in the immediate neighborhood had suffered; in another instance, two sisters and two other children in an adjoining street were seized within a week of one another.

The epidemic reported by Caverly in the *Journal of the American Medical Association* for January 4, 1896, was also referred to. In this outbreak there were no less than 130 cases of disease in which the commonest clinical manifestation was some degree of motor paralysis of widely varying extent and degree. Wedin and Pasteur have reported similar epidemics.

Mention was also made of Dr. Bastian's case in which an attack of acute anterior poliomyelitis followed a wound upon the knee, to stanch the bleeding of which moss from the roadside had been used. While no bacteria have been found in these cases, the experiments of Thoinot are interesting; this observer injected preparations of the bacillus coli communis and staphylococcus, and produced spinal lesions, the peripheral nerves remaining intact. Dr. Buzzard concluded that in view of the experience afforded by epidemics that the term "anterior acute poliomyelitis" was too narrow a designation for the disease, and that infantile paralysis should be regarded as the result of an infective agent, which, whilst its dominant influence is exerted upon the large ganglionic cells in the anterior horns, may affect many other portions of the cerebral spinal axis.

Insular sclerosis is another affection the infectious origin of which seems probable. Charcot, Kahler, Pick, Marie, Whipham, Myers, Barlow, Dawson, and Williams have reported instances in which this disease was a sequel of some one of the infectious fevers. It is well known that multiple neuritis is always of toxic origin. Myelitis, it was stated, seems capable of being caused by a variety of infective agents, its occurrence as a sequel of influenza, small-pox, typhoid fever, syphilis, and gonorrhea, being familiar examples. Widal and Bezancon reported that out of 116 rabbits inoculated with eighty-nine varied streptococci, myelitis was induced in seven cases.

The evidence that locomotor ataxia may be dependent at least for one factor upon syphilis was regarded as unquestionable. In this connection a recent observation of Bernard's was quoted. Two individuals contracted syphilis from the same person at a few hours' interval. They both became affected with tabes twenty-one years later. According to Morel-Larallée three individuals out of five who

had become infected with syphilis from the same source became general paralytics, the other two suffering from cerebral syphilis.

In the discussion Dr. Dercum stated that he was impressed by the importance of regarding the action of the toxin as one upon the nervous system as a whole; and, further, that we should look upon neuritis, poliomyelitis, generalized myelitis, and encephalitis hemorrhagica following influenza as simply the localized expressions of the general action of a toxin. Dr. Ferrier stated that formerly he was not quite persuaded of the universal causal relationship of syphilis to tabes and general paralysis, but the more he inquired, the more convinced he became that these diseases were essentially post-syphilitic affections, so much so that if he were satisfied that there had been no syphilitic infection, he was disposed in obscure cases to exclude tabes and general paralysis. Dr. Bramwell agreed with Dr. Buzzard in thinking that the manner in which the lesions of disseminated sclerosis were so widely distributed through the nervous system, and the apparent relationship of the lesions to the vessels, were highly suggestive of a toxic cause, but at the same time he thought it premature to conclude that the toxic agent was necessarily the result of micro-organisms. He had been in the habit for several years of teaching that several different diseased conditions, such, for example, as chorea, acute rheumatism, and perhaps many inflammations, which at first sight were apparently the result of cold, were perhaps due to the production of some toxic agents, the result of deranged metabolism. The fact that local exposure to cold could rapidly produce great destruction of the red blood-corpuscles and hemoglobinuria could only be satisfactorily accounted for by the rapid production of some toxic substance, the result of disturbed metabolism. If this were so, he saw no reason why such a disease as multiple sclerosis might not be the result of a chemical poison developed in the body as the result of some disturbance of metabolism, or possibly of poison generated and absorbed from the gastro-intestinal tract.

MEDICAL PROGRESS.

MEDICINE.

UNDER THE CHARGE OF

JAMES TYSON, M.D.,

ASSISTED BY

M. HOWARD FUSSELL, M.D., AND A. O. J. KELLY, M.D.

Cardioptosis.

Rummo (*Münchener medicinische Wochenschrift*, No. 29, 1898), at the meeting of the Medico-Chirurgical Academy of Palermo, directed attention to the fact that there are three forms of dystopia of the heart: (1) That due to alteration of the intrathoracic or intra-abdominal pressure; (2) that due to increase in the volume of the heart; and (3) that due to relaxation of the supporting apparatus of the heart. For the latter, he proposed the name cardioptosis. Similarly to ptosis of other viscera, it is an expression of congenital abnormal predisposition, and results from decreased tonus of the vessels going to or from the heart. Traumata, acute or chronic, gymnastic and other exertions, atheroma, emaciation, etc., are exciting causes which become conjoined with the congenital deficiency of the elastic tissue. Neurasthenics, with manifestations of over-excitability and hypertrophy of the heart, should be examined for the condition. The heart, normally depending from the vessels, *touches* with its right border and posterior surface the base of the pericardium, but does not rest upon this structure. After the loss of elasticity it imposes upon the pericardium, descending upon the left lobe of the liver and the stomach. In the higher grades of ptosis there occurs both a vertical and a lateral dislocation of the heart. As regards therapy, in addition to various hygienic, dietetic, and medicinal measures, the author has observed considerable good effect from the patient wearing a band about the epigastrium.

Relaxation of the Heart.

Feilchenfeld (*Berliner klinische Wochenschrift*, No. 9, 1898) states that the lesser grades of cardiac weakness and dilatation are frequently overlooked. He distinguishes three stages of pathologic relaxation of the heart: (1) An incipient or premonitory stage, the chief symptoms of which are palpitation, precordial pains, anxiousness, irritability of the pulse, and a tendency to become exhausted. Examination of the heart reveals no murmur, but the transverse area of cardiac dulness is apt to be increased. These cases are frequently erroneously set down as nervous. The causes are rapid growth at puberty, muscular, sexual, and mental over-exertions, alcohol, tobacco, previous illness, and premature senility. (2) Real relaxation, which may be acute, subacute,

or intermittent. These, also erroneously, are frequently spoken of as cardiac neurasthenia. (3) Actual dilatation. The early stages should be diligently sought for, and palpation is said to be of more service in determining the size of a relaxed heart than is percussion. It is especially important to examine the patient while he is leaning forward. An important symptom of dilatation of the left ventricle may be variations in the rate of respiration, depending upon whether the patient be on his right or left side. In one case there was often observed an increase of 12 to 20 respirations in the minute, when the patient turned from his right to his left side. All cases, except those of permanent dilatation, may be cured, and the best means to attain this desirable end are cardiac tonics, rest, gymnastics, and baths.

Pretuberculous Enlargement of the Spleen.

Tedeshi (*Riforma medico*, January, 1898) concludes, from considerable experience, that enlargement of the spleen is one of the earliest signs of pulmonary tuberculosis, in a certain number of cases. In several patients examined by him, the initial symptoms were anemia, increased frequency of the pulse, some wasting, and enlargement of the spleen. At this time there were no pulmonary symptoms, and physical exploration of the lungs was negative; yet acute tuberculosis shortly thereafter developed. His observations are not yet complete, attention simply being directed to this sign.

Cranial Percussion.

Paoli and Mori (*Il Policlinico*, February 15; *British Medical Journal*, May 21, 1898) have made an extended series of observations on the value of percussing the cranial cavity as an aid to diagnosis in cases of intracranial disease. They begin by giving a careful account of the results obtained by percussing the normal skull. They point out the necessity of shaving the head in cases where the hair is thick, and they prefer to percuss with the finger directly on the surface. They recommend the division of the cranial surface into three symmetrical parts,—frontal, parietal, and occipital,—and in each of these regions there are constant points, so that the note of one side may be gradually compared with the corresponding note of the other. In the case of the frontal and occipital regions there are median points as well. By their investigations they find that a dull note is found in a very limited extent, the rule being a high degree of resonance, with well-marked differences according to the portion percussed. They also find that the results vary with age and sex and, to a certain extent, with the density of the skull-cap. They also find that the sense of resistance varies in different instances. Thus in boys, in the first decennium, there is a very notable resonance in the note, more particularly in the temporal and parietal regions, while in some portions of the frontal (more particularly over the sinuses) and in the occipital, the note is fairly dull. In boys the subjects of rickets the note is still more resonant, and sometimes a crack-pot element is perceived. In adults the note varies to a certain extent; in women there is more resonance, the note resembling rather that obtained in childhood, and a crack-pot sound is not uncommon. In the adult man the resonance is much less than that obtained in women and children, and the areas over which the dull note is heard are much more extensive. In advanced age the opposite obtains, for in old women the resonance is consider-

ably diminished, while in old men of the same age it is much more marked than earlier in life. The authors therefore draw attention to the fact that want of symmetry in the cranial development must be looked for. The areas which generally give a dull note are the parts over the frontal sinuses and mastoid processes, especially in young children, which the writers regard as curious, in view of the fact that there are air-spaces in both these situations. After ascertaining these facts the authors proceeded to examine patients with different forms of intracranial disease. Their first case was a boy suffering from epilepsy, who had fractured his frontal bone by falling. Percussion showed marked dulness all over the portion corresponding to the fracture. The patient was subsequently trephined, and considerable thickening of the dura was then discovered, with a large layer of hemorrhagic infiltration in the form of hematoma, and exactly corresponding with the area of dulness. Several other cases of fracture were similarly examined, and the writers were enabled to note marked degrees in the amount of resonance. Another case is quoted in which, as the result of a fall, a patient lost the use of his right hand and arm and speech. On examination a wound was found over the right half of the occipital bone, and careful percussion showed a marked decrease in resonance on the left side of the head over the parietal. The patient improved considerably, and subsequently regained the use of the right hand and arm, and at the same time percussion showed a return of resonance over the left motor area. The authors consider that this method of examination is likely to prove of considerable service in certain cases of injury to the head.

Perforating Ulcer of the Mouth.

Letulle (*La Presse médicale*, April 2, 1898) reports the case of a man, aged 51 years, an alcoholic and tabetic. The teeth of the left half of the lower jaw, with the exception of the central incisor, were absent. Those on the right side of the lower jaw were healthy. In the upper jaw there were only three teeth, and the remainder of the jaw was atrophic. On the right side of the upper jaw there was a cavity, of which the patient was unaware, involving the alveolar border and the hard palate. Its sensibility was much impaired. The patient admitted that for five months liquid food had come through the right nostril. The lesion is rare, eight cases having been heretofore collected; most of the patients were the subjects of tabes. The condition may be unilateral or bilateral. It has been asserted to be due to an alveolar pyorrhea, but the more probable explanation is that it is an atrophic tabetic lesion due to involvement of the fifth nerve.

Pancreatic Cyst of Unusual Topography.

Payr (*Wiener klinische Wochenschrift*, No. 26, 1898) reports the case of a man, aged 19 years, who, two months after receiving an injury in the epigastrium, began to complain of pain in the same region, vomiting, and a tumor which, presenting itself in the right hypochondrium, soon attained the size of a child's head. The tumor several times disappeared, either spontaneously or after puncture. Each disappearance of the growth was attended with fatty stools and diarrhea; later, emaciation began to ensue. At the operation, the cyst was found to be a pancreatic cyst. This was evacuated, and the cavity packed with gauze. The patient made a good recovery. The cyst

fluid was found to be alkaline in reaction and to contain a sugar-splitting ferment. Attention was directed to the fact that, while the absence of ferments may not exclude the possibility of a suspected cyst being of pancreatic origin, the presence of such ferment is of positive diagnostic value. The interesting fact in connection with the cyst was its situation. It was found between the liver and the stomach; the lesser omentum did not form one of its coverings, it being free in the abdominal cavity. This was to be explained only on the supposition that it had found its way through the foramen of Winslow. The trauma was considered to bear an etiologic relationship to the cyst, which was of the class of true pancreatic cysts, as distinguished from pseudocysts of the pancreas, and the cyst was therefore of traumatic inflammatory origin.

Essential Paroxysmal Tachycardia.

Caceianiga (*Rivista veneta de scienze medicle*, p. 261; *Münchener medicinische Wochenschrift*, No. 29, 1898) states that essential paroxysmal tachycardia is not due to paralysis of the vagus or to irritation of the sympathetic, but that it results from functional disturbance of the nervous centres of the heart, a diminished resistance of the cardiac ganglia, associated with diminished or absent activity of the inhibitory centres.

Test for Peptone in the Urine.

Freund (*Wiener klinische Rundschau*, No. 3, 1898). If the urine contain albumin, it must first be acidulated with acetic acid, boiled, and neutralized, but not filtered. Then to ten cubic centimetres two or three drops of a 10-per-cent. solution of lead acetate are added. The mixture is filtered. The filtrate should be colorless, and is then particularly adapted for the performance of the biuret test, and does not give any of the reactions for native proteids or nucleo-albumin. This test is said to obviate the disadvantages of the more commonly employed tests, in the performance of which, among other inaccuracies, the coloring matter of the urine may simulate the biuret test.

Epilepsy in Secondary Syphilis.

Rubino (*Riv. d'Igiene e Med. Prat.*, April; *British Medical Journal*, July 16, 1898) contributes some observations on the occurrence of epileptic seizures in the course of secondary syphilis. He points out how epilepsy may occur as markedly in the secondary as in the tertiary period of this disease, being due to grave lesions of the superficial structures, or else to direct action of the virus on the epileptogenic centres, and manifesting itself apparently in those patients who are also prone to neuropathic symptoms. The author thinks that it is justifiable to look upon secondary syphilis as the cause of epilepsy when this condition occurs in adult age without other known cause in individuals who were not disposed to this nervous disorder, and in whom the specific affection has either remained latent or has only revealed itself by very slight signs. The clinical picture of secondary syphilitic epilepsy does not seem to differ in its essential characters from the ordinary form, and in referring to it, therefore, by its name, it is not intended to specify a special disease, but rather a variety, differing alike in its treatment and prognosis in view of its

causation. The treatment must therefore be directed to the underlying condition. To this, as a rule, the seizures rapidly respond, but Rubino points out the importance of continuing antisyphilitic treatment for a considerable time; for if one rests content with the early and apparent immediate success, there is likely to be a return of the seizures in a very chronic form.

The Influence of Autointoxication in the Production of Epilepsy.

Weber (*Münchener medicinische Wochenschrift*, No. 26, 1898). The views regarding the occurrence of epilepsy may be arranged as follows: The symptom-complex of this affection results from some disease of the cerebral cortex, in the production of which three elements are operative: (1) Hereditary taint; (2) personal predisposition, the result of injurious influences which may affect the nervous system at any time after birth; (3) a periodically recurring exciting cause, which, through irritation of the predisposed cortex, results in the occurrence of the epileptic seizures. Clinical observations, the results of investigations into metabolism, and pathologic anatomic findings, show that the poisonous products of disturbed metabolism have considerable bearing upon the second and third of these elements. Little is known as to the nature of these poisonous products; in some cases the offending agent is supposed to be carbamate of ammonium, resulting from urea. In the therapeutics, therefore, attention should be directed to dietetic regulations, which would influence metabolism and permit of the ready discharge from the body of these poisons. In addition, however, the administration of the bromides is of the utmost value.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

ASSISTED BY

CHARLES H. FRAZIER, M.D.

The Surgical Occlusion of the Cerebral Sinuses.

Robert Thompson Stratton (*Annals of Surgery*, August, 1898). The literature on the subject of surgical occlusion of the cerebral sinuses offers but little encouragement in this field, and suggests but one mode of occlusion,—namely, by ligation. Stratton points out numerous objections to this procedure. In the first place, ligature of the cerebral sinuses is attended with certain well-founded dangers; the sinus itself may be lacerated, as the ligature is drawn taut, and troublesome hemorrhage ensue, or, by the necessary increase in tension on the dura, too much pressure may be exerted upon the cerebral mass. If the dura be freely incised before the ligature is applied such a complication may be avoided, but there still remains the threatening danger of uncontrollable hemorrhage from laceration of the sinus. As a substitute for ligation

Stratton recommends the application of a clamp, citing his own case of fibro-sarcoma of the falx cerebri, in which he employed this method. The patient succumbed on the fifth day after the operation, and at the autopsy it was found death was due chiefly to failure in the establishment of the collateral circulation. The clamp fulfils the requirements admirably, the ease and celerity with which it was applied, and the absence of hemorrhage, either due to laceration of the sinus wall or when the clamp was finally withdrawn, are features that claim for it superiority over the ligature. To be sure, the application of the clamp involves more or less free incisions in the dura, but, inasmuch as these eliminate the dangers resulting from undue tension, they may be regarded rather as expedient. To minimize the dangers attending the operation one must comprehend and, if possible, eliminate the factors which predispose towards this failure in the establishment of the collateral circulation. These include (1) a low degree of blood-pressure, resulting from excessive hemorrhage; (2) the shock of the operation and the prolonged administration of the anesthetic, producing feeble cardiac action and dilatation of the peripheral vessels; and (3) the sudden stoppage of the flow of blood through the sinuses. Excessive hemorrhage may be controlled by a tourniquet applied firmly to the scalp, a method of hemostasis that has proven efficient. If, after the application of tampons to the cut edges of the dura, there should be much hemorrhage, the final step of the operation may be postponed for a week or two until the effects of the preliminary stage have passed off. The clamps may be applied to bring about either immediate or gradual occlusion. It is most important that veins of the pia mater should not be injured, since through them the blood-current is to be maintained after occlusion of the sinuses is effected.

On the Cause and Mechanical Treatment of Subluxation of the Semilunar Cartilages of the Knee-Joint.

Newton M. Shaffer (*Annals of Surgery*, October, 1898). This condition was first described by Hey, who termed it "internal derangement of the knee-joint." As a matter of fact, it is questionable whether an actual subluxation of the cartilages occurs at all, except, perhaps, in the cases caused by violent traumatism. As to the etiology of their condition, it was the generally accepted view that this so-called subluxation occurred while the knee is flexed and the leg rotated. All of this may be true, but Shaffer contends that there must be other causative factors, since simple rotation of the leg during flexion and extension is a normal movement. On reviewing the notes of eight of his own cases he found the following conditions present, and holds them to be the chief etiological factors: (1) A very considerable lateral mobility of the joint; and (2) an elongated ligamentum patellæ. This exaggerated lateral mobility of the knee permits of increased rotation of the tibia in flexion or extension of the knee, and thereby predisposes towards a subluxation of the cartilage. The elongated ligamentum patellæ so modified the action of the quadriceps extensor muscle upon the tibia—that the force of its contraction upon the tibia is so modified or delayed—that extension and rotation are not synchronously performed. It is probable that, if one of these two conditions exists separately, subluxation will not take place; but it is equally true that their coexistence should be regarded as the most plausible explanation of the occurrence of this condition. For its relief certain indications must be

met and dealt with. The lateral mobility of the joint must be corrected, rotation of the tibia upon the femur must be prevented, and extension of the knee must be interrupted at a point where the traumatism of locomotion would cease to exist,—that is, at a point where pain and discomfort would be wholly eliminated. These indications are satisfactorily dealt with in an apparatus which Shaffer has devised and employed with great satisfaction in his practice. It consists of a long external rod, running from the upper third of the thigh to the ankle, with a hinge at the knee and ankle; of a short internal rod, running but a short distance below the knee; these rods being connected with bands above and below the knee-joint. A pad placed just over the centre of the internal condyle is an essential feature. The extension of the external rod to the foot prevents any external rotation of the tibia during flexion and extension of the knee. The results, following the employment of this apparatus, exceeded expectation; in some instances the patients were able finally to dispense with the brace altogether, while in others it was only worn while engaging in rather vigorous exercises. The over-stretched and relaxed ligaments and the elongated ligamentum patellæ became shortened during the treatment, and the joint gained correspondingly in stability and strength.

Curvature of the Neck of the Femur, sometimes called Coxa Vara.

Charles H. Frazier (*Annals of Surgery*, July, 1898). Since the publication, in 1894, of Hofmeister's exhaustive article on the subject of curvature of the neck of the femur, some forty cases have been collected by Frazier, who contributes two cases that came under his own personal observation. The etiology of this condition is one about which there is much discussion. Excluding from consideration the infantile cases, a group in the etiology of which rickets has been recognized, there was only one of twenty-six cases, or 3.8 per cent., in which clinical or pathological evidences of rickets were demonstrable. It is well known that there are numerous diseases of the bone that could cause this deformity, such as osteomyelitis, osteomalacia, chronic ostitis, arthritis deformans, etc., but up to the present time the evidence does not admit of the acceptance of any one of these as the pathogenic factor in the majority of cases. Of those cases whose etiology is undetermined, the majority occur during the age of puberty. In view of the observations of Humphrey on the normal angle of the neck of the femur, at different periods of life, and under various circumstances, which prove that the angle of the neck is constantly changing during the period of growth, and that this change is due chiefly, if not altogether, to the superimposed weight of the trunk, Frazier believes it not unreasonable to assume that a disproportion between the body weight and the size of the bones may be the chief etiological factors in those cases occurring during the period of adolescence. The specimens that have been examined hitherto are too few to be of any great service in the study of the pathology of this affection. The treatment of this condition depends largely upon the degree of deformity and functional disturbances. During the painful period rest in bed with extension will usually afford prompt relief. If the case is in the incipient stage the patient may be allowed to go about with a traction hip-brace, until it is reasonable to assume that further deformity will not ensue. The operative treatment is reserved for those cases in which the deformity is so far advanced as to interfere with the functional activity of the limb, and in such cases a linear osteotomy through the neck of the femur is the operation of choice.

THERAPEUTICS.

UNDER THE CHARGE OF

HORATIO C. WOOD, M.D., LL.D.,

AND

ARTHUR A. STEVENS, M.D.

The Treatment of Poor Tuberculous Patients in Sanitariums.

Netter and Beaularon (*Presse médicale*, August 3, 1898), in a paper on this subject before the Fourth Congress for the Study of Tuberculosis, held at Paris from July 27 to August 2, thus formulate their conclusions:

(1) The treatment of indigent tuberculous patients in sanitariums is demanded from three stand-points: (*a*) The sanitarium assumes the isolation of the tuberculous person, whose very presence constitutes a danger to society. (*b*) The sanitarium, by reason of its special appointments, affords the tuberculous the treatment which they need. (*c*) The sanitarium, being specially devoted to the most curable cases, allows the realization of true financial and social gain, as the results obtained by insurance companies against disease and old age have demonstrated.

(2) Isolation hospitals and quarters, as it appears to us, only imperfectly answer a part of the question,—viz., that which treats of the tuberculous as a danger to society. Their establishment entails the inconvenience of a very heavy outlay, which would not be exceeded by the establishment of sanitariums that would completely solve the entire problem.

(3) We should use all our endeavors to direct to the sanitariums those patients who are most easily curable, those who are just at the beginning of the disease. It is important to facilitate this, to pay attention to the support of the family of those sent to hospial during the absence of those on whom they are dependent.

(4) The considerable pecuniary sacrifices exacted by this reform being given, it is necessary that general support should associate itself with that of the public powers in the struggle.

The Treatment of Migraine.

Frieser (*Münchener medicinische Wochenschrift*, August 30, 1898) bases his observations on twenty-nine cases. He maintains that migraine is rarely a disease by itself, but is a symptom accompanying some other affection. Sometimes there is a hereditary predisposition, and the author gives details of three such cases. Migraine often complicates anemia, and also, in the author's opinion, various diseases of the female generative organs. He gives details of a case in which the replacement of a retroflexed uterus was followed by a cessation of the attacks. The author has seen migraine in cases of ear-disease, and details of a case are given in which, after the removal of a nasal polypus, there were no more attacks. One of the most frequent causes of migraine lies in dyspepsia, due to chronic gastric catarrh, dilatation of the stomach, etc. Imperfect digestion of carbohydrates is sometimes found. Overwork in schoolchildren is an important etiologic factor. Frieser mentions two cases in which

injury to the head and a violent mental emotion, respectively, were followed by attacks of migraine. He thinks that the actual cause of the attack consists in the fermentative and other changes in the stomach contents. In the attack itself the author washes out the stomach; and if this cannot be done, large quantities of warm water should be taken. He looks upon menthol as the best remedy. Constipation and dyspeptic symptoms must be carefully treated by diet and otherwise. Antipyrin, phenacetin, etc., cannot be relied upon. Frieser has obtained better results with benzacetin and trephinin, which he gives in doses of one-half grain. Valerianate of menthol may be used in the intervals. He has known relapses occur even after a period of more than a year after the last attack.

The Use of Pyramidon in Diseases of the Nervous System.

Landenheimer (*Therapeutische Monatshefte*, 1898, Heft 4, S. 177) reports upon the use of this antipyrin derivative in more than 100 instances during the past year. In headache of undetermined origin, especially when occurring during convalescence from psychoses, five to eight grains gave relief after the lapse of one hour to two hours. It was equally successful in the headaches of alcoholics. In hysteria the results were uncertain, but for nervous men, those overworked and sleepless, the remedy gave satisfaction. The pain of alcoholic neuritis was not beneficial, although the sensitiveness of the nerve-trunks was lessened. Of lumbago, two instances were benefited, a third unaffected by even large doses. Only two patients suffering from acute articular rheumatism came under observation. The pain speedily lessened, the swelling gradually disappeared. Chronic rheumatism was not benefited. The lancinating pains of tabes were temporarily benefited. The maximum dose given above can be safely administered thrice daily. Untoward symptoms have not been noticed.

Recent Improvements in the Treatment of Chronic Heart-Diseases by Exercises and Carbonated Brine Baths.

Satterthwaite (*The Post-Graduate*, 1898, No. 6) presents a valuable paper. He makes use of the resisted movements almost exclusively, meaning that the patient makes regular voluntary movements, which are resisted by the physician or operator. These movements are fully illustrated by a series of thirty-seven plates. For the baths, which must be given in wooden or porcelain tubs, ordinary American sea-salt is preferred, because benefit is obtained from the iodides and bromides which it contains. To each pound of this, one and one-half ounces of calcium chloride are added. The carbon dioxide gas, which is added after two or three baths have been taken, is obtained from the action of sodium bisulphate, commonly known as the acid sulphate, upon sodium bicarbonate, such a quantity being employed that ¼ to 1 per cent. gas solution is obtained. The duration of the immersion is from four to twenty minutes, but no longer. The temperature should not exceed 95°, nor go below 85°; indeed, rarely below 90° F. At first the baths are given with an intermission every second day, then every third, later every fourth day, and still later every fifth day. The course of baths lasts from four to six weeks. After the bath the patient should be rubbed dry with towels, remain in-doors, and rest for an hour at least.

Seroguaiacol in the Treatment of Tuberculosis.

Berlioz (*British Medical Journal*, August 20, 1898), at the recent Congress of Tuberculosis, presented a communication in which he stated that in order to combat the impairment of the constitution, as well as the microbic infection, he had attempted to combine with serum, which has a stimulating action on the nutrition, as a remedy of well-known efficacy in tuberculosis, namely, phosphite of guaiacol, which contains 95 per cent. of guaiacol and soluble phosphorus. A still more active product is obtained by adding glycerinated extract of testicle, liver, brain, spleen, or lung, in the proportion of 3 per cent. This mixture is administered in enemata of thirty grains. Two such enemata may be given daily. Berlioz said that by this treatment he had obtained considerable improvement in tuberculous patients.

OBSTETRICS.

UNDER THE CHARGE OF

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ASSISTED BY

W. A. NEWMAN DORLAND, M.D.

Pregnancy with an Unruptured Hymen.

Albespy (*Gynécologie*, August 15, 1898) reports the case of a young woman, 23 years of age, who assured him she had only had intercourse once with her lover, which had proved very painful and had not permitted of penetration. He found the hymen intact and with a very small orifice capable only of being entered by a sound. Labor began next day, and after the discharge of the amniotic fluid the membrane was incised, and a speedy parturition without evil sequelæ followed.

Hydatidiform Mole.

Kennedy (*New York Medical Journal*, September 17, 1898) reports a case of hydatidiform mole, and describes the condition as follows:

It is generally conceded now that hydatidiform mole is a proliferative degeneration of the chorionic villi; that the origin of this degeneration seems to be maternal; that among the maternal predisposing causes syphilis holds an important place. Just how the vesicles constituting the hydatidiform are formed is not satisfactory to all. Since the origin of this degeneration seems to be maternal, the degeneration of the chorion must antedate and produce the death of the fetus. According to Darland and Gerson, from a study of 100 reported cases, the most favorable age is between 20 and 40, 68 per cent. having occurred between these ages; they also found that uterine hemorrhage was a common symptom, and that there was a great tendency to septic intoxication after delivery. Their studies show a mortality of 10 per cent.

A healthy fetus and a hydatidiform mole have been known to develop side by side. This would lead us to believe that the degeneration of the chorion was due to fetal disease. The weight of authority, however, seems to be that hydatidiform mole does not result from disease of the embryo. Retained placenta cannot become affected with hydatidiform mole,—conception is necessary to the development of hydatidiform mole.

The degeneration affects the villi of the chorion within the first ten weeks of pregnancy.

Volkmann reports an interesting case where the degenerated villi had invaded the uterine blood sinuses, and by pressure led to so extensive an atrophy and absorption of the uterine walls as to leave only a thin, transparent septum between the mole and the peritoneal covering of the organ. Schröder reports two cases of this character, in one of which the cystic degeneration was attended by fatal peritonitis and the other by rupture of the uterus and death from hemorrhage into the peritoneal cavity.

The Pernicious Vomiting of Pregnancy.

Harris (*Medical Age*, August 25, 1898) concludes a paper on this subject by stating that there are certain methods of procedure which the experience of this and similar cases he has met with lead him to accept as safeguards in future emergencies that may arise: First, in cases of uncontrollable vomiting of pregnancy, where the woman's health begins to fail and emaciation becomes marked, he counsels insistence on terminating the pregnancy, and, failing to gain the consent of the patient and her friends, withdrawal from the case at once. Secondly, where active interference is decided on in cases that come under treatment in the so-called third stage, he deprecates wasting time by the slower methods, and urges rapid dilatation and the emptying of the uterus at once. Thirdly, after emptying the uterus by this or any other method, the patient should always be left in charge of a competent nurse or a physician, at least during the twenty-four hours immediately following. This is important, since, as in the case cited by him, the real crisis frequently follows immediately in the wake of the operation, and unless promptly met and effectually combated all previous efforts will have been in vain.

Interstitial not Identical with Tubo-Uterine Pregnancy.

Beckmann (*Zeitschrift für Geburtshülfe und Gynäkologie*, Vol. xxxv, Part iii, 1898) relates a case in his own experience where he found a true interstitial pregnancy, the sac being absolutely independent of the uterine part of the tube, whilst there was no question of a rudimentary horn or allied teratological condition. The patient was 27 years old; her last pregnancy ended eight years since. The period was quite regular till it suddenly ceased, and when it had been absent four months she was seized with violent abdominal pain, followed by syncope and pallor. The peritoneum was full of blood, and a fetus was found in the coils of the small intestine; it was a male, over six and a half inches long. A retroperitoneal hysterectomy was performed, and the patient was saved. Beckmann describes the uterus and the sac with great minuteness, and without any drawings. The sac was as big as an apple, and lay in the uterine wall close to the left cornu; the relations of the round ligament were normal, the left Fallopian tube ran on the uppermost part of the

sac, a little posterior to the seat of rupture. The lumen of the tube lay normally in its substance, and did not communicate at any point with the cavity of the sac. The true uterine cavity was regularly lined with a decidua of a pale pink color, the wall of the sac bulged into it, but there was no communication between their cavities. There was a well-formed placenta lining the inner wall of the sac, where it bulged towards the true uterine cavity, extending to the upper part of the sac. The round ligament ran from the outside of the sac towards the inguinal canal, not from between the sac and the uterus, as in tubo-uterine pregnancy. The former site of origin is also seen in pregnancy in a rudimentary horn, but Beckmann examined the uterus very carefully, and was satisfied that there was not a trace of any division of the uterus into abnormal cornua. Beckmann admits that this "true interstitial pregnancy" is closely allied to the tubo-uterine variety. The ovum embeds itself in the musculosa of the uterus immediately on issuing from the uterine orifice of the tube. The author discusses the subject at length, quoting a large number of cases. He believes that if diagnosed very early the cervix may be dilated, and the septum between the uterus and the cavity of the sac incised so as to allow of the delivery of the fetus through the normal passage.

The Production of Abortion by Nitrate of Silver.

Perlsee (*Prager medicinische Wochenschrift*, July 21, 1898) was called upon to bring about miscarriage in four cases of pregnancy complicated by nephritis and uncontrollable vomiting. He did this most successfully by the introduction of a stick of nitrate of silver above the inner os uteri. The stick should project about one-half inch from the holder so as to disinfect the cervical canal as it is introduced. Pains came on in from two to six hours after the cauterization. In every respect the delivery in the four cases was as perfect as could be wished for. The operation has the merit of simplicity, promptness, efficiency, and is aseptic.

Intrauterine Typhoid.

Fordyce (*Scottish Medical and Surgical Journal*, Vol. iii, No. 1, 1898) reports a case in which typhoid was demonstrated in a five months' fetus. The mother aborted and died soon after. No autopsy could be obtained, but there was doubt about the diagnosis. Externally and internally nothing abnormal could be seen, by the naked eye, in the fetus or its appendages. There was a small quantity of serous fluid in the abdomen. The intestines seemed quite healthy, the liver and spleen were not enlarged. Tubes inoculated from the kidney, spleen, and intestinal contents gave pure cultures of the typhoid bacillus; the blood was sterile. Care was taken to make tests, which showed the absence of the bacillus coli communis. It was impossible to demonstrate bacilli in the tissues by microscopic examination. The Widal test was very successful in this case.

GYNECOLOGY.

UNDER THE CHARGE OF

CHARLES BINGHAM PENROSE, M.D.,

ASSISTED BY

H. D. BEYEA, M.D., AND H. L. WILLIAMS, M.D.

Remarks on the Mortality from Cancer.

W. Rodger Williams (*Lancet*, August 20, 1898) has compiled an interesting set of statistics on the cancer mortality of England, Scotland, Ireland, and Wales during the last fifty years, and accompanied them with a theory as to the reason for the constant increase of the cancer mortality during this period, which is certainly worthy of thought and attention. In 1840 there occurred 2786 deaths from cancer, one death from cancer occurring in every 5646 of the population,—one death from cancer in every 129 deaths from all causes.

In 1860 there were 6827 deaths from cancer, one death from this cause occurring among every 2915 of the population, or one death out of every sixty-two due to this cause.

In 1880 the number of deaths from cancer reached 13,210, one death from this cause occurring in every 1946 of the population, or one death in every forty being due to cancer.

In 1896 the deaths from cancer reached the number of 23,521, one death in every 1306 of the population, or one death in every twenty-two deaths from all causes.

A remarkable fact about the increase of the cancer mortality is that it has affected males to a much greater extent than females. In 1851–60 the sex ratio of deaths from cancer were 1 to 2.2, the higher percentage being among women.

In 1861–70 the ratio was 1 to 2.1. In 1871–80 it was 1 to 1.9. From 1891–95 it was 1 to 1.6, and in 1896, 1 to 1.4. Thus, while the cancer mortality for males from 1851–90 has increased 167 per cent., the increase for females has been but 91 per cent.

In regard to staying this constant increase in the cancer mortality Mr. Williams says, "I have no hesitation in declaring my belief that there need be no more difficulty in mitigating the prevalence of cancer, and, perhaps, even eventually extinguishing it altogether, than there is in arresting the development of typhoid fever, small-pox, and tuberculosis. I believe that the tendency to cancer may be increased by unsuitable modes of living, and *vice versa*. We must therefore seek out the conditions which favor its development; and by avoiding them we shall be able to avoid the disease. In my opinion, it is only by progress along such lines that the cure of cancer is ever likely to be effected."

The principal deleterious influences are comprised under the terms of alimentation and domestication. High feeding is considered to be the most potent single factor. The author considers that in the majority of communities the amount of food eaten is out of all proportion to the requirements. Especially harmful is the gluttonous consumption of meat. Statistics show

that the consumption of meat in Great Britain has reached the great total of 131 pounds per head per year. And this, too, when a less healthful mode of life is followed than that of fifty years ago. When excessive quantities of highly stimulating forms of nutriment are ingested by persons whose cellular metabolism is defective, it seems probable that there may be thus excited in those parts of the body where vital processes are still active such excessive and disorderly cellular proliferation as may eventuate in cancer. No doubt other factors co-operate, and among them I should be especially inclined to name deficient exercise and probably, also, deficiency in fresh vegetable food."

Senile Uterine Catarrh.

Crom (*Edinburgh Medical Journal*, April, 1898), clinical lecturer on diseases of women, Royal Infirmary, Edinburgh, presents the following points as worthy of most careful attention in making a clinical differential diagnosis between senile uterine catarrh and primary carcinoma of the fundus:

"First and foremost, in most cases of primary fundal cancer, periodic and severe pain is an early and prominent symptom; whereas in senile uterine catarrh the pain is irregular and colicky, or, if not, it is slight and constant. Second, in cancer, fetid discharge, at least in the early stage, is unusual, because the os is closed and the face of the cancer is protected from external influences; whereas in catarrh the fetid discharge is an early and prominent symptom. Thirdly, local examination in cancer finds the uterus distinctly enlarged and sensitive, and it early becomes heavy and fixed; whereas in the simpler condition the uterus is either normal and remains freely movable throughout. Lastly, dilatation and local exploration reveal the presence of the neoplasm in the one case and the absence of all irregularity in the other."

[Editorial Note.—Clinical phenomena are of undoubted value in establishing a diagnosis in these cases, and should always receive due attention. But to attempt to arrive at a diagnosis in these cases by means of clinical manifestations *alone* is most certainly unwarranted. For there are many cases of primary malignant disease of the body of the uterus which develop so insidiously that by the time a positive diagnosis can be determined from clinical manifestations the disease has progressed beyond the reach of operative cure. We maintain that on the first suspicion of malignant disease of the uterine body, the entire cavity should be carefully curetted and the scrapings carefully examined microscopically by a competent pathologist, and that thus only can an early positive diagnosis of malignancy be established.]

PATHOLOGY.

UNDER THE CHARGE OF
JOHN GUITÉRAS, M.D.,
ASSISTED BY
DAVID RIESMAN, M.D.

Contribution to the Technique of Incipient Column-Degeneration.

Schaffer (*Neurologisches Centralblatt*, October 1, 1898) states that Marchi's method as well as Weigert's method does not show the earliest stages in the degeneration of the nerve-fibres,—namely, a peculiar swelling of the myelin. He finds that if Marchi's method be applied to spinal cords that have been thoroughly and completely hardened in Müller's fluid, it will show these earliest changes. The method consists in hardening the cords for from three to six months, cutting them into very thin slices, and placing them for one week into Marchi's mixture. The latter fluid should be changed once. The little disks are then placed daily in fresh water for about one week or even two weeks. They are then embedded in celloidin and cut into sections. There is marked differentiation between the healthy and diseased parts, both microscopically and macroscopically. The degenerated parts are uniformly yellow, while the healthy parts are dark brown. It should be remembered that this differentiation appears before the ordinary Marchi or Weigert method gives any intimation of disease.

The Culture of the Bacillus of Hansen and the Sero-Diagnosis of Leprosy.

Spronck (*La Semaine Médicale*, September 28, 1898) has succeeded in cultivating a bacillus from cases of leprosy which is apparently identical with the bacillus of Hansen, of which an unequivocal culture has hitherto not been obtained. The author's studies lead him to the following conclusions: (1) That the bacillus of Hansen is cultivable and easily transplanted in successive cultures. (2) In three cases of mixed leprosy, the cultures in two gave bacilli resembling the bacillus of leprosy, and answering for the purpose of the sero-diagnosis of this disease. (3) The bacilli adapt themselves with difficulty to artificial culture media, and seem to need nutritive materials carried to the culture media from leprous lesions. Glycerinated neutral potato is at present the only medium on which colonies have been obtained, at the end of ten days, at 38° C. (4) Colonies cannot be transplanted on potato, but are easily inoculated on the gelatinized horse-serum of Löffer. (5) The bacilli are immobile, chromogenic, facultative aërobic. They do not grow in meat-bouillon, but grow readily in simple bouillon of fish. (6) The artificial culture produces a modified race of leprous bacilli. Treated with Flemming's solution, the cultures do not turn dark; furthermore, the bacilli are more readily decolorized by the Ehrlich method than the bacillus of Hansen studied under ordinary conditions. (7) This modified race of bacilli resembles more the diphtheria and pseudodiphtheria bacilli than that of Koch. It does not appear to be pathogenic for animals. (8) The serum of non-leprous persons comports itself to-

wards the bacillus of Hansen as the serum of non-typhoid patients towards the typhoid bacillus. It is exceptional to observe agglutinations by such serum in strength of from $\frac{1}{30}$ to $\frac{1}{40}$. (9) The serum of leprous persons agglutinates the bacillus in dilutions of from $\frac{1}{60}$ to $\frac{1}{1000}$. (10) There is probably no relation between the agglutinizing power of the serum and the clinical symptoms, or the form or intensity of leprosy. (11) The sero-diagnosis seems capable of rendering actual service in practice. The author has been able to diagnosticate a case with it. (12) Leprous serum, to which equal quantities of 1 per cent. carbolized bouillon is added, and which is kept from the air and light, preserves its agglutinating power for at least six weeks. The desiccated serum conserves the same property during a period of one month. (13) For purposes of sero-diagnosis it is necessary to employ living and young cultures. Emulsions of bacilli killed by heat or the addition of antiseptics cannot be utilized. (14) It is probable that the bacilli isolated by the author are the same as those obtained by Bordoni-Uffreduzzi, Gianturco, Babes, Levy, and Czaplewski.

Concerning the Action of Certain Narcotic Substances on the Blood Alkalinity and the Red-Corpuscles.

Thomas (*Archiv für experimentelle Pathologie und Pharmakologie*, Band xli, Heft 1, March, 1898) has investigated the effect of several toxic substances on the blood, and reports in the present paper his results with alcohol, chloroform, and ether. In a former study he had found that, after the administration of alcohol to a rabbit, the animal succumbed to one-sixth of the dose of cholera germs that was necessary to kill a sober rabbit. This fact was explained by assuming that alcohol diminished the bactericidal action of the blood. In the present paper the studies are detailed, which were made to determine what factors of the blood were affected by alcohol. Experiments were also made with chloroform and ether. The conclusions arrived at are as follows: (1) In acute alcoholic intoxication, carbon dioxide as well as the alkalinity are greatly reduced, due to the fact that there is an increase of volatile fatty acids, which, for the moment, displace the carbon dioxide. The decrease of the red corpuscles cannot be of moment, as it is not constant. (2) The effects of chronic alcoholism make themselves fully manifest only after several months. The alkalinity remains about normal, the oxygen decreases, and later also the carbon dioxide. (3) After subcutaneous injections of ether, just as after injections of morphine and chloral, the oxygen of the blood is reduced. The carbon dioxide and alkalinity remain practically the same. After the inhalation of ether, the carbon dioxide is increased, the oxygen diminished, and the alkalinity unaltered, while the number of corpuscles is increased, and may even be doubled. This is to be explained on the ground that the blood becomes inspissated and venous on account of the diminished oxygen-supply. (4) Chloroform seems to diminish the alkalinity of the blood.

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REMARKS AT THE OPENING OF THE COURSE ON MEDICINE, UNIVERSITY OF PENNSYLVANIA, SESSION OF 1898–99.

By James Tyson, M.D.,

PHILADELPHIA,

Professor of Clinical Medicine.

The circumstances surrounding the unfortunate event which has deprived this school of its distinguished professor of the Theory and Practice of Medicine were such that it has been impossible to fill the chair prior to the opening of the session. The suddenness of the event, its unexpectedness, its occurrence at the very height of the season when Trustees and Faculty alike were absent from the city, many at distant points, and even in foreign lands, all combined to make full and deliberate consideration of the situation impossible at an early date. Yet it was necessary to provide for the instruction in some way, because the work must go on. With a view of meeting this necessity I have been asked to take general supervision of the teaching in medicine, clinical and didactic, until such time as a permanent arrangement can be made. To the same end there have also been designated to aid in the didactic instruction four of the most experienced of the official instructors in clinical medicine, including the assistant professor of Clinical Medicine. With the assistance of Professor Musser and Drs. Fussell, Packard, and Stengel we hope to provide the best possible substitute for the unspeakable loss we have sustained.

The exact method in which this portion of our work will be carried out has not been fully elaborated, but this much can be said:

First, an effort will be made to assign to each lecturer some subject to which he may have paid especial attention, and which he may, therefore, be considered correspondingly qualified to discuss, and which he will therefore treat somewhat as a specialist.

First will be treated those diseases which were not considered by Dr. Pepper during the session of 1897–98. These include diseases of the lungs and pleura, of the digestive tract, liver, pancreas, peritoneum, and constitutional diseases, such as rheumatism, gout, and diabetes.

Following this will be discussed, in the order of importance, as determined by frequency and prevalence in this latitude, other affections considered during the session of 1897–98. These include especially fevers and other infectious diseases, diseases of the heart and kidneys, and nervous diseases. How far the entire subject of medicine will be covered in such a course it is impossible to say, but when it is remembered there are provided some ninety lectures, it does not seem unlikely that a very large part of the field of internal medicine will remain uncovered.

As far as possible these lectures will be illustrated in the clinics and ward classes, by cases selected from the wards and dispensaries as well as by diagrams, models, and chemical demonstrations. After all these have been considered, there remain a group of diseases of such unusual occurrence that they are never or almost never met in this climate. Should it happen that one of these is to be found in the wards of the hospital, it will be sufficient to present it and describe it in clinic, and exhibit it to the ward classes, while in the absence of such opportunity, if time permit, a passing notice must suffice, to show at least that we are not ignorant of the existence of such disease. In this way the clinic may be expected to supplement as well as to illustrate the didactic lecture.

At this point, too, it may not be inappropriate to say a word on the uses of the didactic lecture. A few words in this connection are especially justified, from the fact that at the present time the didactic lecture is *sub judice* and under arraignment, as it were, in the course of which continuance is threatened. There are those who would omit it altogether from the curriculum, regarding it as unnecessary, because they believe medicine is better taught from cases at the bedside, and that, where the latter are wanting, text-books contain descriptions which serve the same purpose as the didactic lecture. This is putting the case with the strongest plea against the didactic lecture, and it must be admitted that something may be said in support of such plea. On the other hand, no hospital in this country possesses material which will exemplify each of the forms of disease which should be discussed in a complete medical curriculum, its varied symptoms, its complica-

tions and sequelæ, and its causes. Were this possible, a didactic lecture could be made of a clinical lecture, as is done in some of the larger clinics in Europe. That is, cases could be shown which exhibit every symptom and complication of disease and from this the didactic lecture built up. But even supposing this to be possible, the clinical lecture is still necessarily incomplete, in that it is more or less fragmentary and angular, and even under the most favorable circumstances points are necessarily omitted. These omissions are furnished by the didactic lecture, and the subject is thus rounded off and completed. This is confirmed by the fact that in the German schools, which are everywhere quoted as types for imitation, the didactic lecture still fills an important *rôle*, more important even than in this country. Thus, in a letter just received from one who has spent much time abroad, and has made a study of methods of teaching there with a view to comparison and contrast with our own, and who within a few days has returned from a last trip to Europe, I am informed that in Practice of Medicine are given three lectures a week for eighteen months, Surgery three lectures a week for eighteen months, Legal Medicine two per week for twelve months, Gynecology and Obstetrics each two a week for six months, Pharmacology two lectures per week for six months, Therapeutics three times a week for six months, while General Pathology has six every week for twelve months. All these are obligatory.

Mental diseases, syphilis, diseases of the eye, etc., are taught clinically, but there are didactic lectures on these branches for those who desire to attend them.

In a recent discussion in Germany on the subject of teaching medicine, in which the most distinguished professors in the German universities took part, von Ziemssen, of Munich, whose clinic, from the abundance of its material, furnishes, perhaps, the nearest approach to a didactic lecture illustrated by clinical material, makes the following statement:[1]

"I would not create the impression that I would put the theoretic lectures in the background to active laboratory work. On the other hand, a systematic view of the general subjects must be held as an absolutely essential preliminary for practical work. The course of lectures covering the whole region of general and special pathology and therapy in two semesters is essential, and the faculty should be compelled to see that these lectures are provided. No cases should be passed that have not had a systematic and exhaustive course on special pathology and therapy. The student consoles himself easily with the notion that all these things come later in the clinic and that

[1] Intercollegiate Journal, 1898.

he can read them at home in text-books to greater advantage. The *idea that the clinic can replace systematic lectures is absolutely foolish,* but, unfortunately, it is very common among the student youth; and, on the other hand, the *studies at home can never replace the spoken words,* all the less if the latter are illustrated by demonstrations with figures, systematic drawings, models, etc.

"How it is in reality when lectures are displaced by private studies in general I will willingly leave unexplained."

This last sentence would seem to dispose, at least, of the displacement of lectures by private studies.

From what I have said you will have inferred that I consider the didactic lecture should still hold a place in the medical curriculum. By which I do not mean to say that it is by any means a substitute for the clinic and bedside teaching. This would ill become one whose office it has been for years to teach medicine by the clinic and the bedside. I hold that it is simply impossible to-day to teach medicine in this country thoroughly by these methods only. Should the day ever come in which it will be possible from the hospital and the dispensary, it will become possible only by more than doubling the number of hours devoted to clinical and ward class teaching. For while the living illustration is commonly vivid and impressive, it is not always so. Moreover, much more time is required to show it than the diagram, while for its successful application it is for the most part necessary that the student should be close at hand in small sections. Nor is anything gained by discussing at the bedside systematic treatment, or treatment beyond what is required by the individual case, or by discussing questions of diagnosis before the patient.

Finally, the illustration of a subject by morbid specimens, of which every well-appointed museum has a number, is practically impossible in the presence of the patient, while it is of the utmost value to the student in connection with the systematic description of a disease.

By combining the two methods, I believe, we accomplish the best results. Perhaps the most important part of our instruction will be the bedside instruction, but it is evident that a long systematic discourse covering a full description of a disease would be out of place here also. The bedside instruction will be given to both third- and fourth-year classes. That of the third year will be, as far as possible, preparatory to the fourth year, simpler, and afford an opportunity to apply to disease the principles of physical diagnosis which are taught in the first and second years. Case-taking will be an important part of the third-year instruction, while we will also avail ourselves of the services of the fourth-year students as clinical clerks in the wards.

An important feature of our teaching to the fourth year will be

the clinical conference, for which a patient will be assigned to two and possibly three students, to be thoroughly worked up by them in the presence of the entire class, who are expected to ask questions and discuss the case in all its bearings. This exercise I regard as obligatory. It will probably be conducted by one of the assistants. A part of this exercise will be five-minute papers on points arising in the discussion, which will be assigned to members of the class to look up.

Finally, an opportunity, which I regard as too much neglected in the past, is the Blockley Clinic, as we are fond of calling it, the clinic at the Philadelphia Hospital. An effort will be made to free the hour of ten on Wednesdays and Saturdays from other complications which make it unavailable to you, and I cannot too strongly urge upon you the attendance on these clinics, where a class of cases will be seen somewhat different from those met in our own hospital, while the proximity of the Philadelphia Hospital to our school makes it accessible without loss of time.

A CASE OF TUMOR OF THE BRAIN MISTAKEN FOR ABSCESS.[1]

By Charles W. Burr, M.D.,

PHILADELPHIA,

Clinical Professor of Nervous Diseases in the Medico-Chirurgical College.

The history of the case is as follows: M. S., a white married woman, 49 years old, was admitted to my wards in the Philadelphia Hospital on May 3, 1897, in a state of coma. Dr. S. F. Gilpin, the resident physician, was unable to learn anything about her except that two days before she had gone to her room in a lodging house apparently in good health, and that she was found there unconscious a few hours before her admission to the hospital. Whether unconsciousness came on suddenly or slowly and whether she had had any previous symptoms was unknown.

On examination we found a fairly well-built, middle-aged woman, with clear, pale skin, and bluish lips. Coma was absolute. The raised right arm and leg fell more heavily than the left. The face was not drawn to either side. The heart and lungs were normal. The palpa-

[1] Read before the Section on Otology and Laryngology of the College of Physicians of Philadelphia, November 1, 1898.

ble arteries were not rigid. The pulse was 100, the respirations 28 per minute. The urine contained neither albumin, casts, nor sugar. The temperature was 99⅖° F. The following day consciousness returned suddenly. There was then absolute palsy of the right arm and leg and slight palsy of the lower part of the right side of the face. The right arm and leg were a little stiff. The knee-jerk was equally exaggerated on both sides. There was no ankle clonus. Sensation to touch and pain was normal, or rather, we ought to say, since we were dependent entirely on gestures by the patient, pressure and pain-sense were normal and light touch seemed to be felt; she seemed to respond. The tongue protruded straight and she could move it well in the mouth. She was absolutely speechless, but understood what was said to her as was proven by obeying all commands given her, as, for example, to lift the left arm, hold up one, two, or more fingers, wink either eye, etc. There was no local muscular wasting, no edema, and the circulation in the extremities was good. On both legs there were a few suspicious areas resembling specific psoriasis, but the palms and soles were without blemish. On the right buttock there was a bedsore with superficial ulceration surrounded by an area of marked congestion. During the first five days in the hospital the temperature of the axilla varied irregularly from 99⅖° to 96⅖°. It then rose suddenly to 101°, and an irregular fever, sinking in the morning to or almost to normal and rising in the evening to 101° or 102°, came on and lasted one week. She had no chills. On the ninth day, the temperature being 102°, she recovered speech suddenly. She spoke distinctly, and showed no signs of motor or sensory aphasia or of difficulty in articulation. Speaking, however, tired her very much, probably on account of her slight hebetude, and she could not give any clear account of how she became ill. She said only that her health at the time of the onset of the attack was good, save for backache and a feeling of general weakness that she had had for several months. She did her work as a charwoman up to the day of the attack. She remembered going to bed, but had no recollection of later events. Two weeks later, her condition otherwise remaining the same, the palsy had improved enough to enable her to move the right arm and leg a little. This improvement was gradual, not sudden, but at the end of the next week she suddenly and completely lost speech and became absolutely hemiplegic, including the right face, without becoming unconscious. Two days later she fell into coma. During this period her temperature had varied from 99° to 100°, and on the day after coma appeared rose to 103°. During the next four days it varied between 101° and 103°, and on the fifth again fell to normal, and with the fall consciousness returned and she could again speak, but the palsy remained as before.

Six days later she again fell into coma, the temperature during this time varying between normal and 100°, usually keeping about 99⅕°, and there being some muscular rigidity on the left (the non-palsied) side, the right being flaccid. There was no ankle clonus on either side. The right knee-jerk varied greatly almost from minute to minute, while the left was constantly exaggerated. Four days later, coma persisting and the temperature having risen to an average of about 100⅕°, a sero-purulent discharge from the left ear began. The ears had been examined several times before and nothing found. The pus was creamy-yellow and not foul odored. The following day I asked Dr. George Morley Marshall to see her with me, with a view to operation. He did so, opened the left mastoid region, and has kindly sent me the following account of the operation and of the condition found:

"On examination, the left mastoid region was to all external appearance normal. Although patient was unconscious, yet on firm pressure over mastoid she would wince.

"A muco-purulent, non-offensive discharge exuded from the left canal. On cleansing the canal the discharge was detected oozing from the middle ear, through an indistinguishable perforation in the tympanic membrane. A large segment of the upper portion of the membrane was bulging.

"*Operation.*—The bulging segment of membrane was incised, also the lower posterior quadrant.

"The mastoid was opened by a linear incision, through integument and periosteum, two inches long, parallel to the line of attachment of the auricle and one-fourth inch from the posterior wall of canal. The bone was then gouged out to a depth of three-quarters of an inch. About one-fourth inch from the surface the lining of antral cavity was exposed and found bulging. When opened it yielded purulent matter. Some small accessory cavities were likewise affected. Others were free from pus.

"The affected cavities were curetted or obliterated and the wound packed with iodoform gauze.

"The gauze was removed in two days, showing wound in good condition. No pus being present, and that in the canal but slight, and condition of parts continued thus till death of patient, four days later.

"Dr. George Morley Marshall."

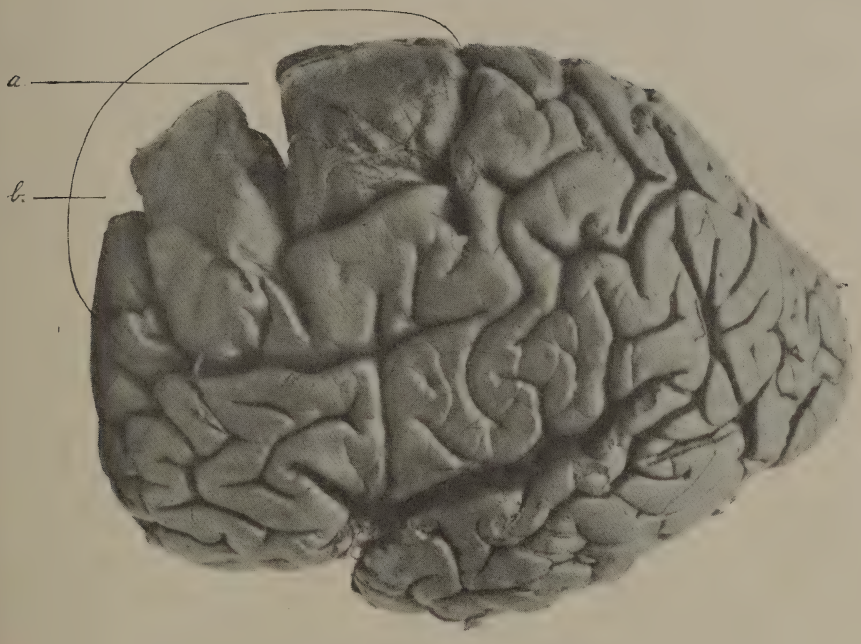
The patient's condition remained the same for three days after the operation as before it, and then the temperature rose to 103° F., remained there for about three days, and then in twenty-four hours rose to 107°, and she died on June 23, 1897.

At the necropsy the seat of the surgical operation was found in good condition. There were a few drops of yellow, creamy pus in some of the mastoid cells on the left side. The inner surface of the skull, the dura and pia were normal. There was no abscess in the brain. On removing the brain the median surface of the left cerebral hemisphere, anterior to the corpus callosum, was found to bulge and to press strongly against the right hemisphere, in which it had made a shallow indentation. In the upper part of the convex surface of the left prefrontal lobe was an irregular grayish-yellow, non-encapsulated mass under the pia. On examination this mass was found to occupy all the superior and inner part of the prefrontal lobe, going back to but apparently not involving the ascending frontal. It also appeared on the roof, outer wall, and floor of the extreme anterior part of the lateral ventricle. The convex surfaces of the middle and inferior frontal convolutions seemed not to be involved. Both lateral ventricles were a little distended by clear watery fluid. Dr. A. O. J. Kelly made a microscopic examination of the growth and reports as follows:

"Sections of the tumor show that it is composed of oval cells with slightly irregular oval nuclei that stain deeply with hematoxylin. The blood-supply is rich, the vessel walls being sometimes normal, but more frequently composed only of a single layer of endothelium. Throughout the tissue of the tumor are numerous hemorrhages, in part recent, with well-preserved red blood-cells, in part more ancient, showing only a granular residue. In the centre of the tumor is a large area of necrosis, the nuclei staining indistinctly or not at all, and the protoplasm quite granular. Smaller foci of necrosis were also found in the periphery of the tumor. In addition to the characteristic tumor cell certain peculiar cells are found here and there in the tumor without any very definite arrangement. They are almost circular in outline with a small, eccentrically placed nucleus, often irregular in outline. In appearance they resemble very closely swollen endothelium, but seem to me to be too large to have originated in this manner. It is, therefore, probable that they are either sarcoma cells undergoing a degenerative process, or else glia cells that have been included in the neoplastic process. The tumor is a sarcoma."

The abdominal and thoracic viscera showed nothing noteworthy. The spinal cord was not examined.

I never reached a clear, definite, and satisfactory diagnosis during my study of the case. My opinion changed frequently and was never fixed. On the first day I assumed rather hastily that it was a case of cerebral hemorrhage, the sudden onset, the fall in temperature, the coma, and palsy all pointed that way. Later events and more careful examination made me sure that there was something more, and other



Mastoid disease and brain tumor.

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than mere hemorrhage. The variability of the symptoms, the irregular fever, the now present now absent power of speech, the recurring coma, the rapidity with which symptoms came and went proved positively the lesion could not be vascular even though the apparent onset was sudden. That there was an organic lesion was equally certain. The symptoms, though varying, were not hysteric in type. Further, it was beyond doubt that the lesion was focal and gross, not diffuse and extensive. There remained then only two possibilities,—tumor and abscess.

Now I do not propose to give you a long and elaborate list of points in the differential diagnosis of brain tumor and abscess (all of us can diagnose the simple cases with the proper symptoms, occurring in the proper sequence), but only to speak of some of the matters that seem to me to be of interest in this particular case, and of the reasons which inclined me strongly, until after the operation, to the view that an abscess was present. The mode of onset of the symptoms was altogether unlike that usual in tumor. We rank among the curiosities of medicine those cases of tumor in which, without the preceding headache and vertigo and vomiting, and without a slowly oncoming palsy or a local or general convulsion, and without any lesion of the eye-ground, a man apparently in good health is stricken with sudden unconsciousness and hemiplegia. True, after death we found the tumor just where it ought to have been to have caused such a mode of onset, in an almost silent region of the brain, creeping up to but not destroying the motor tract, and near enough to it to affect it by the varying blood-pressure occurring in the zone of congestion around the lesion. But we did not know the location in life, and the absence of the general symptoms, as important almost in abscess as in tumor, was confusing and still is inexplicable. In abscess the onset of active symptoms may be abrupt, but not usually with coma and hemiplegia. Manifestly the lesion was not in either of the most frequent seats of abscess due to ear-disease,—the temporo-sphenoidal lobe or the cerebellum. It was near the motor tract, but not involving the cortex, or there would have been convulsions early in the course of the disease. It was near the motor speech-centre, but not destroying it. But whether it was anterior to the motor region or beneath could not be determined, and it was possible for an otitic abscess to have occurred in either situation. When fever appeared, followed by a discharge of pus from the ear, I thought I began to see light in the puzzling alternative of tumor or abscess. True, it was not the greenish, bad-smelling pus common in abscess, but the discharge is not always of that kind. The fever itself was of the seesaw type common in pus-poisoning, and I did not lay great stress upon the absence of chills and sweats. The pulse rose and

fell in frequency with the fever, never being below 80, once rising to 160, and averaging about 120. There never was the slow pulse common in uncomplicated cerebral abscess. It is curious also to note, in examining the temperature chart, that there was no constant relation between the height of the fever and the appearance of new symptoms or the persistence and severity of old. More than once new symptoms appeared coincident with a falling temperature or speech and consciousness returned with its rise. This, of course, was against abscess, and I should have regarded it with more care and put more stress upon its importance. Finally, looking back over the entire clinical history of the case, some light is thrown upon it by an examination of the course of the disease. In abscess of the brain, in the terminal stage, the stage of active symptoms, the progress is usually steadily downward. New symptoms may be added, but it is not common, as happens not infrequently, in tumor for aphasia to appear and disappear, and for a palsy to improve and then grow suddenly worse, and for there to be several attacks of rapidly oncoming coma. The period of patient's illness, fifty-one days, was very long for abscess, very short for tumor. Altogether the case was puzzling. It did not lend itself well to easy classification. At first it looked like hemorrhage, but this likeness soon passed away, and then some symptoms pointed towards tumor and some towards abscess, while with such complicating evidence I was unable to reach a positive opinion. As to whether the diagnosis could have been and ought to have been made I am, of course, prejudiced. Suffice it to say, tumors and abscesses have in the past and will again in the future be mistaken for one another, and this is in the nature of things, for both are alike in this that they are foreign bodies in the brain, and that many of the symptoms depend upon their mere presence, and not upon their pathologic nature. The diagnosis of abscess depends much more upon the existence of symptoms outside the brain, and the finding of an adequate cause, than it does upon the nervous symptoms.

Fortunately, therapeutics, though as the event proved useless, was not hindered by my doubt as to the proper diagnosis. Certainly it may be laid down as a good general law in the present state of brain surgery that when there is a reasonable suspicion that an abscess exists, it is justifiable, indeed imperative, to make an exploration, the extent of operation being decided by the conditions found.

A NEW METHOD FOR THE ARREST OF NASAL HEMORRHAGE.[1]

By Arthur W. Watson, M.D.,

PHILADELPHIA.

Owing to the peculiar construction of the nasal fossæ hemorrhage from the nose may be extremely difficult to control. As the nasal cavities are narrow and deep and open posteriorly into a cavity of considerable size, the application of some of the most effective surgical methods for the arrest of hemorrhage, such as pressure upon the bleeding point and the ligature, is difficult or impossible. In the following remarks I do not propose to consider those slight hemorrhages which stop spontaneously or by simple measures, such as heat, cold, pressure, styptics, etc., but those hemorrhages, sometimes spontaneous, but most frequently traumatic, often following intranasal operations, which try the patience and skill of the physician and the endurance of the patient.

In severe hemorrhage from the nose the method usually adopted to arrest the bleeding is the making of pressure on the bleeding point by packing the nose from the front. If this fails, after repeated packings and unpackings, as a last resort the posterior nares are plugged.

When the hemorrhage comes from the anterior part of the nose, or when the bleeding point can be plainly seen, anterior packing is usually successful. In cases, however, when the blood comes from some distance back, packing from the front may or may not succeed, depending upon whether we *happen* to get the pressure on the bleeding point, the chances of doing so being lessened by the tendency of the packing to slip backward into the naso-pharynx. Several ingenious methods have been devised to prevent the packing from slipping backward, but while accomplishing their object by controlling the packing from behind, they are difficult of execution in the presence of a brisk hemorrhage, and do not always enable us to stop the bleeding.

In plugging the posterior nares, as you doubtless know, a ligature is passed through the nose and brought out of the mouth. To this is tied a plug of lint or cotton, generally directed to be "as large as the thumb or a walnut,"—in other words, large enough to practically fill the naso-pharynx, which is then, by traction on the ligature, drawn

[1] Read before the Section of Otology and Laryngology of the College of Physicians of Philadelphia, November 1, 1898.

into the naso-pharynx and against the choana. The anterior naris is then plugged; the object being to tampon the nose back and front, and thus allow the formation of a clot filling the nose. I have described this procedure thus fully in order that it may not be confused with the method which I propose to describe later. By this method hemorrhage can generally be stopped, but it is accompanied by so much discomfort to the patient and danger of complications, such as septicemia and middle-ear disease, that it is usually resorted to only after every other device has failed.

There is another method for arresting hemorrhage used in general surgery, which may be applied to nasal hemorrhage, which I have found to be simple in application and satisfactory in results,—that is, pressure on the vessels above the seat of hemorrhage. In order to understand the *rationale* of this method, as applied to the nose, it may be well to consider the circulation of the nose.

There are two main sources of blood-supply of the nasal fossæ, one from the front the other from the back, thus dividing the nose, as far as our subject is concerned, into two regions: the anterior, roughly speaking, that portion anterior to the turbinates; the posterior, all back of the anterior. The anterior is supplied by the superior coronary artery, a branch of the facial. It supplies the upper lip and ascends to the nose, being distributed on the septum and the ala of the nose. The posterior part is supplied by the nasal or spheno-palatine artery, a branch of the superior maxillary. "It passes through the spheno-palatine foramen into the cavity of the nose at the back part of the superior meatus and divides into two branches: one internal, the artery of the septum, passes obliquely downward and forward along the septum, supplies the mucous membrane and anastomoses in front with the terminal branch of the descending palatine. The external branches, two or three in number, supply the mucous membrane covering the lateral walls of the nose, the antrum, the ethmoid, and sphenoid cells." (Gray's "Anatomy.")

Thus we see that by making pressure on the walls of the nasal cavity in the posterior portion we should be able to control bleeding from any part of the cavity anterior to the point of pressure up to that part supplied by the anterior vessels.

In several instances, in which I have had an opportunity to try it, I have found this to be the case. The method I have used is very simple, and is as follows:

A ligature is passed through the nose in the same manner as for posterior plugging. A piece of gauze is folded to from sixteen to twenty-four thicknesses (according to the size of the nose), making a pad about an inch and a half long and three-quarters of an inch wide.

The ligature is tied around the middle of this gauze pad, which is then drawn into the naso-pharynx by traction on the ligature and aid from the finger, and then, by steady pulling on the ligature, into the posterior part of the nasal cavity. As the pad enters the nose the ends fold back, thus doubling its thickness and making pressure on the lateral walls. It has been my experience that, as the pad is drawn into the nose, the hemorrhage stops. No anterior packing is required.

The following brief report of two cases will show the kind of hemorrhage in which this method has been successful:

Case I.—A man, about 40 years old, a patient at the Howard Hospital, whose deviated septum I had straightened in the morning, came to me in the evening of the same day bleeding profusely. It was more than two hours before I had sufficiently controlled the bleeding to allow him to go home, after trying every way that I could think of except plugging the posterior nares, and then only after packing both nostrils. The bleeding was renewed on his way home and again on the next day, but not so severely. On the second day I saw the patient again, removed the packing and put in another, on one side only. There was no bleeding, but as a precaution I admitted the man to the ward, and had him put to bed. The next day, on visiting the patient, I found the resident physician trying to stop the hemorrhage, which had recurred. After spending some more time in a vain endeavor to stop the blood by anterior packing I resorted to the method which I have described, with the result that as soon as the pad was drawn into the nares the bleeding entirely stopped. The pad remained in place about forty-eight hours, when it became loose and was removed. There was no renewal of the hemorrhage.

Case II was a man about 25 or 30 years old, who had fractured his nose and had come to one of my colleagues at the Polyclinic Hospital. He had set the fracture and straightened up the septum, which was deflected. The man returned to the hospital one or more times daily for several days, with severe hemorrhage from the nose. He was treated by any one who happened to be on duty at the time; each time the nose being packed and the bleeding with difficulty stopped. Finally, one afternoon, he was brought to my clinic by one of the residents, who had been trying for about an hour to stop the bleeding, but without success. Having the foregoing history before me, I thought it not worth while to try anterior packing again, but used the same method as in the first case. The bleeding stopped immediately, and was not subsequently renewed.

Finally, to sum up:

(1) The method is simple and easy of performance.

(2) It is not painful nor more disagreeable to the patient than anterior packing.

(3) It is free from the dangers attending posterior plugging.

(4) In removal of the pad there is not the danger of renewing the hemorrhage that attends anterior packing.

THE ABUSE OF ERGOT IN THE TREATMENT OF HEMORRHAGE.[1]

By Frederick A. Packard, M.D.,

PHILADELPHIA.

It is now quite a long time since the writer was impressed with the fact that ergot might be not only of no value, but positively harmful, in the treatment of hemorrhage. This view has been strengthened partly by the good results achieved in treating hemorrhage by remedies acting in a manner diametrically opposite to that of ergot, partly by seeing the steadily increasing number of writers who are urging the use of remedies other than ergot in hemoptysis.

My first doubt as to the value of ergot in hemorrhage occurred when I looked back upon my treatment of a case of traumatic internal hemorrhage to whom I had given ergot upon his admission to the University Hospital, in which institution I was at that time resident surgeon. On thinking over my treatment of the case after his death, I hoped that I had done the patient no harm by giving ergot, but I became convinced, after but little thought, that I could not possibly have done him any good. And yet I was acting, as I thought, for the best when I ran over in my mind the various hemostatics and concluded that ergot would do the most good.

Since then this question of the use of ergot in any (non-uterine) hemorrhage has been frequently present in my mind, and I am convinced that I have acted for the best in refraining from the use of the drug.

Other cases have been seen by me which have convinced me that ergot was frequently administered with as little hope of good result and as much capacity for harm as was the case in the patient mentioned above with a rupture of some visceral arterial trunk.

One of these cases was in the person of a large, florid man seized

[1] Read before the College of Physicians of Philadelphia, November 2, 1898.

in the street with vertigo, difficulty in speech, and some impairment of power in the right arm. He had been helped into a drug-store, where he was given by the combined druggist and physician a hypodermic injection of some ergot preparation. He almost immediately became unconscious, had complete right hemiplegia, and died but a short time after being brought to the hospital. Doubtless the druggist went through somewhat the same train of thought as myself in the case at the University Hospital: hemorrhage occurring, a hemostatic is needed; tannic or gallic acid or acetate of lead cannot reach it; ergot is the best drug to use, as it narrows the calibre of the arteries. This may have been an example of ingravescent apoplexy from the very onset, but the history pointed to a slight and gradual hemorrhage until the administration of ergot, when the whole picture changed.

I was asked to see in consultation a man with phthisis showing marked hemorrhagic tendency. He had had a profuse hemoptysis a week before I saw him, and had been constantly spitting up fresh blood in small quantities ever since, in spite of the steady use of moderate doses of ergot administered at rather frequent intervals. I advised the discontinuance of ergot and the administration of concentrated food without any medicine. The hemorrhage ceased quite promptly, and for quite a number of weeks, to my knowledge, had not returned. Of course, the hemorrhage might have stopped at the same time without any change in treatment, yet the coincidence, if such it were, was quite striking and suggestive.

In going through the wards of a hospital with one of my friends, the visiting physician, we came to the bed of a man who had just been brought into the ward. He had been coughing up small quantities of blood for some days and had with him a half-emptied bottle of ergotin which he had been taking because of a former severe hemorrhage, many slight bleedings, and the advice of a physician to always have ergot on hand in case of a repetition. He showed very distinct evidence of loss of blood, and the physician ordered an immediate hypodermic injection of a large dose of ergotin. This was the last patient seen in the ward, yet before we had left the hospital doors the resident physician was summoned to the new patient, who was having a severe hemorrhage from the lungs. I later heard that the patient never rallied, but died within twenty-four hours from exhaustion. In this case ergot certainly failed to control the hemorrhage.

During the summer I saw an elderly lady with chronic interstitial nephritis, left ventricular hypertrophy, and high arterial tension. She had had several alarmingly protracted attacks of nose-bleeding, and was at that time taking a nightly dose of ergot as a preventive of further attacks. I know nothing as to the medicinal treatment of her

former nose-bleedings, but do not wonder at their severity if ergot was the hemostatic selected for internal administration. Epistaxis in such cases results, doubtless, partly from disease of the blood-vessel walls, but chiefly from the extreme tension existing within these vessels. This tension ergot would surely tend to increase.

Medical hemorrhage occurs from capillary oozing or from rupture of a blood-vessel. The capillary oozing occurs in those with too great a bulk of blood within the general or local vascular system, in those with certain poorly understood changes in the blood (scurvy, hemophilia, and the various anemias), or in those with diseased blood-vessels. Hemorrhage from rupture (barring external trauma) occurs from degeneration, erosion, atheroma, or calcification, with or without aneurismal dilatation of the blood-vessel walls.

Except in cases of bleeding resulting from the condition of the blood, hemorrhage is arrested, either naturally or by the aid of drugs, through the formation of a clot which plugs the rent. The formation of such a clot is favored by a sluggish stream retarded by a rapid, forcible flow. Cohnheim thus puts it: "When a defect, or gap, is produced at any point in the vascular system, all resistance ceases there, and the blood will, in consequence, flow towards it and escape through the aperture with an energy which naturally is greater the higher the pressure prevailing in the part of the vascular system involved." A clot once formed, maintains its position as a plug in the orifice just so long as its adhesion to the orifice of the opening is sufficient to resist the pressure of blood within the blood-vessel.

Ergot acts as a vasoconstrictor by its centric action upon the vasomotor centres, vessels under observation being seen to contract after its administration. This action is present in both the systemic and the pulmonary circulation (James Andrew, Bradford, Dean, Bokenham). If its action could be directed against the vessel or system of vessels actually concerned in the hemorrhage, it is conceivable that the drug might do some good, although even in that case it is difficult to see in what way contraction of the muscle fibres in the neighborhood of a vascular rent could fail to draw apart the divided edges. Such local selective action upon a part of the vascular system might conceivably produce ischemia of the part, but its occurrence is not claimed or proved. Again, it is reasonable to presume that the vasoconstrictor action of ergot would be decidedly less effective where the vessel wall was diseased than in places where it was healthy, so that any local vasomotor effect would be far more than counterbalanced by the general vessel constriction with its consequent rise of blood-pressure. The administration of a dose of ergot causes a rise of pressure in the general and pulmonary circulation. Pre-

sumably, therefore, there would be greater tendency for a clot to be swept from the point of rupture. If the mass of blood were previously large enough to seek escape through the rent in a vessel, diminution in the capacity of the vascular system from constriction of the arterioles would tend to increase such escape, the only alternative to this conclusion being that the portal circulation received the relatively excessive bulk of blood,—a more purely theoretical supposition.

The attempt to check hemorrhage by a means that diminished the capacity of the blood-vessels of the body would seem to be exactly the reverse of what we should aim at.

Even with hemorrhage on the venous side of the capillaries the same reasoning would apply, as it is not proved that arterial constriction causes a fall in venous pressure. It is also to be considered that, in comparison with arterial hemorrhage, bleeding from the venous side of the circulation is rare.

No one could entertain the idea of controlling hemorrhage from a ruptured aortic aneurism by the use of ergot. To go from large to small things, why should we hope for benefit from its use in the case of smaller diseased vessels, or why should we use ergot to check leakage from the overfull vessels of chronic interstitial nephritis?

In hemorrhage from the bowel (as in typhoid fever), the blood escapes not from dilated but from eroded blood-vessels. What good can be accomplished by diminishing the total vascular area? Even if we could produce diminution in the calibre of the ruptured vessel by the use of ergot, we should bear in mind that at the same time we are increasing the peripheral resistance offered to an already handicapped heart. In hemorrhoidal bleeding, in cases of rupture of esophageal varices, and other forms of medical hemorrhage, it is, to my mind, equally useless to contract the arterioles.

In opposition to the views that I am endeavoring to present, it has frequently been said to me that experience has proved the value of ergot in hemorrhage. This I would grant in the case of postpartum hemorrhage, but I am sceptical as to any other form. In this scepticism I find myself supported by an increasing number of authorities who decry its use in hemoptysis. I would urge its being abandoned in other forms of medical hemorrhage as well. In postpartum hemorrhage it doubtless is of value,—as is also the Credé method,—but probably more from its power of contracting the womb than by its action on the blood-vessels. It is to be remembered that in the case of medical hemorrhage, our old friend, *post hoc ergo propter hoc*, must be considered, and that with the administration of ergot or any other drug we always combine valuable measures for the relief of pressure, such as recumbent rest, relief of mental agitation, etc., which may of

themselves cause sufficient diminution in pressure to more than counterbalance the physiological action of ergot.

Finally, I would sum up the views expressed above as follows: In treating medical hemorrhage our object should be to endeavor to favor the formation of a clot in the ruptured vessel by measures that increase the coagulability of the blood, by calcium chloride, or, where possible, by local applications (such as the topical use of such remedies as hamamelis in epistaxis, the gentle inhalation of turpentine, or other hemostatic vapor in hemoptysis, the administration of tannic acid in hematemesis, of acetate of lead in hemorrhage from the bowel), to prevent mechanical disturbance of the clot by producing local rest (opium to check cough and to stop peristalsis), and to use our best efforts to lessen blood-pressure (as by restriction of fluid ingestion, by the use of saline laxatives where permissible, by the hot foot-bath, by ligature of the extremities, by veratrum viride, nitroglycerin, or venesection in various classes of cases), but, above all, to avoid any cause for increase in blood-tension, and especially to abstain from the use of ergot, which is, above all other drugs, the most active in lessening the capacity of the arterial tree.

PSYCHOLOGY IN THE MEDICAL SCHOOL.

By William Scott Wadsworth, M.D.,

PHILADELPHIA.

To one familiar with European universities the article by Professor Mills in the last issue of this Magazine comes with great force. It appeals most strongly to the young man who has just commenced to practise what he has been studying for four years.

What does it matter that certain medical schools in this country ignore the study of psychology, to the young man who is facing a serious nervous condition? He feels the want in proportion as he is intelligent, and he knows his training has been defective.

The very first case I was called on to prescribe for in a medical dispensary was one of functional nervous disorder, and if my training had been limited to the instruction at the medical school, I should certainly have had small comfort and the patient small profit. Several things that a medical man should understand are as yet taught imperfectly; foremost among these comes psychology as a systematic study of the higher functions of the nervous system. We have a most excellent basis in the lectures on the anatomy and physiology of

the nervous system, and we have brilliant clinics on such cases of morbid conditions as may from time to time present themselves.

We have able lectures on diseases of the mind which are too much neglected by the student. Every student goes out with a fair conception of the heart's action, of respiration, of heat-production, but of the action of the mind on the body, in health and disease and of the health of the mind, not one in a hundred has a respectable understanding.

I well remember, when a public lecture was to be delivered on hypnotism, hearing men who were soon to be graduated, say, as they went into that lecture, that they did not believe in hypnotism. Perhaps that may seem a very little thing; viewed superficially it is a little thing; but in the light of modern methods it is a state that can be tolerated only by the ignorant and the unprogressive.

For a dozen men who are graduating from the first medical school in America to agree that a subject that commands the best thought of the best minds, both in physiology and medicine, was all a fake, was a thing not calculated to inspire one with wild intellectual delight that these young men were not properly trained is a plain, simple fact, and one that must be met. I say must, because it ought to be met, and what ought to be done in our medical school must be done.

What I have said will appeal to those who are in a position to judge of these things; but there are those who need a word further, because the discussion of these things lies just beyond their immediate sphere of activity.

Let any layman think over his friends and see if he can find examples of mental sickness,—of children who are excitable and restless, —whose symptoms were studied and whose viscera were treated with absolutely no benefit.

Let him think of business men who went into a decline, wasted away, spent months in vain attempts to recover health, and who either "just got well" or fell into the hands of some charlatan, with a pathy, who had picked up a smattering of practical psychology, or simply died an untimely death. I need not appeal to any thoughtful physician, for he already has dozens of such cases in mind, where mental symptoms were the factors, and where he could do nothing with the viscera or through the viscera.

I will never forget watching one of the greatest minds in the medical world struggling with a simple mental case, a case of persistent wakefulness. He struggled in vain trying to cure the disease by treating visceral symptoms that were wholly secondary, and only as the end seemed near did he consent to the use of the hypnotic, with the proper psychic coefficient, and the result was regarded as a sort of magic by the on-lookers. Case after case comes to mind of persons

who have wandered from town to town, from country to country, nerve sick, brain sick, or heart sick; and why? Because there was no one to cure them. Again why? Because the few, brave, enterprising, medical men who dared to study and apply psychological medicine were too few and too busy. There are those who will scorn the very idea of psychology now, but when the enlightened world sits in judgment on them they will find they will share the renown of the antivivisectionists and other moss-grown feeble intellects.

Many pages, yes, many books, could be filled with the tales of the cry of the over-strained, brain-sick multitudes for better treatment, but we have suggested enough to indicate the very great need for better training in the fundamental sciences that underlie rational treatment of nervous diseases. There is no class who can treat these conditions if the medical men fail.

And how do we train the medical student for this great field?

There is the greatest urgency in the cry of the functionally disturbed minds and brains of this country.

The study of the normal mind first, then the study of abnormalities. It is a necessity for the profession and for humanity.

Toxic Alimentary Dyspnea.

Bohn (*Journal de Médecine*, June 10, 1898) records his observations upon the occurrence of a form of dyspnea under conditions of toxic absorption from the intestine. This form of dyspnea is intermittent, but tends to persist. It may be exclusively nocturnal or may occur during the day as well; and sometimes the latter form supervenes in patients who have heretofore suffered only at night. An attack which may follow some slight exertion, usually commences with a sensation of constriction across the chest and weakness. There follows a sensation of rigidity across the chest and respiratory movements become wellnigh impossible. Noisy gastric eructations and vomiting may supervene; palpitation of the heart ensues; the respirations assume the type of an asthmatic seizure; and face becomes pale and a cold sweat breaks out. The attack lasts for half an hour or more, and may be followed by sanguineous expectoration. Physical examination reveals tachycardia and *bruit de galop*, but few or negative signs in the lungs. There may be intervals of long duration between the attacks. Associated with the disorder there may be pallor of the integument, vertigo, and insufficiency of the kidneys. The condition is thought to be due to arterial spasm with accompanying increased arterial tension. The affection is thought to be brought about by some intestinal defect in one whose arterial system is in some way disordered, or whose eliminating organs are defective. Dietetic indiscretions are liable to be followed by the absorption of some toxic material, thus bringing about the attack of dyspnea. This alimentary toxemia, which is exogenous, depending upon some poison introduced from without, must not be confounded with uremic dyspnea, which is endogenous, the result of poisons produced within the body. Dietetic principles guide in the treatment, and patients with arterial sclerosis must be particularly careful. A milk diet is of especial service.

THE ANOMALIES OCCURRING IN THE ANATOMICAL ROOM OF THE UNIVERSITY OF PENNSYLVANIA DURING THE SESSION OF 1897–1898.

By John M. Swan, M.D.,

PHILADELPHIA,

Assistant Demonstrator of Anatomy, University of Pennsylvania ; Dispensary Physician, Presbyterian Hospital.

[FROM THE ANATOMICAL DEPARTMENT, UNIVERSITY OF PENNSYLVANIA.]

The work in the anatomical room of the Medical Department of the University of Pennsylvania during the session of 1897–98 required 190 bodies. The following anomalies were observed by the students dissecting the parts, or by my colleagues, and in each case confirmed by my own observation.

Anomalies of the Muscular System.

In two subjects the biceps muscle of the right arm had three heads. In each case the third head arose from the anterior surface of the shaft of the humerus.

In one body a muscular fasciculus of the left pectoralis major muscle was inserted by a long, slender tendon into the internal condyle of the humerus.

In one subject there were two tendons that were inserted into the palmar fascia of the right hand. Each of the tendons came from a distinct muscular belly.

In one specimen the tendon of the flexor sublimis digitorum muscle, which passed to the middle finger of the right hand, was not pierced by the corresponding tendon of the flexor profundus digitorum muscle.

In one case a tendon from the flexor carpi ulnaris muscle passed from the flexor surface to the dorsum of the hand, and was inserted into the extensor aponeurosis of the little finger. The arrangement was bilateral.

Anomalies of the Peripheral Nervous System.

In one subject the spinal accessory nerve did not pierce the sternomastoid muscle.

There were four anomalies of the median nerve. In one case the

median nerve was a branch of the inner cord of the brachial plexus, and presented no outer head.

In one body the median nerve was formed three and one-half centimetres below the tendon of the teres major muscle. A small branch from the outer cord of the brachial plexus joined the inner head of the nerve. (Fig. 1.)

In two subjects the median nerve, after its formation, was joined by a branch of the musculocutaneous nerve. This branch passed

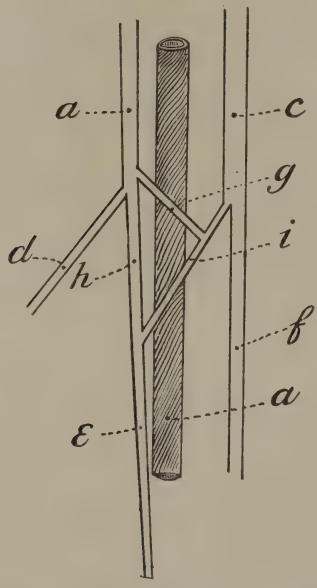

FIG. 1.—*a*, axillary artery; *b*, outer cord of brachial plexus; *c*, inner cord of brachial plexus; *d*, musculocutaneous nerve; *e*, median nerve; *f*, ulnar nerve; *g*, branch from outer cord of brachial plexus to inner head of median nerve; *h*, outer head of median nerve; *i*, inner head of median nerve.

through the substance of the coracobrachialis muscle in order to reach the median nerve.

In one instance the right musculocutaneous nerve did not pierce the coracobrachialis muscle.

There were five high bifurcations of the great sciatic nerve; three of these were unilateral and the remaining two were bilateral.

In one subject the right great sciatic nerve was formed by the union of two branches that left the pelvis by passing through the great sacrosciatic foramen; one above and the other below the tendon of the pyriformis muscle. The branch that passed above the tendon of

the pyriformis muscle subsequently became the external popliteal nerve.

In another case the right great sciatic nerve was formed by the union of two branches of the sacral plexus; one of which left the pelvis by passing through the great sacrosciatic foramen, above the gemellus superior muscle, and the other of which left the pelvis by passing through the lesser sacrosciatic foramen, below the gemellus superior muscle.

In one body a branch from the musculocutaneous nerve of the right leg joined the short saphenous nerve.

Visceral Anomalies.

In one subject there was a patulous foramen ovale. The opening was occluded by a valve-like flap of endocardium.

In one body there was a saccular aneurism of the arch of the aorta. In one subject there was a dissecting aneurism of the aorta. (See *Transactions of the Pathological Society of Philadelphia*, 1898, Vol. i, N. S., p. 40.)

In one case there was a hernia of the cecum and vermiform appendix.

In one body there was a markedly dilated rectum.

In one instance there was a well-marked Meckel's diverticulum.

In one subject there was a double ureter on the left side. The two ureters emptied into the bladder by a common opening.

In one instance the thoracic duct emptied into the junction of the right internal jugular and the right subclavian veins.

One body presented bilateral talipes valgus.

Anomalies of the Arterial System.

There were six anomalies in the arrangement of the branches of the arch of the aorta. In three bodies the left vertebral artery was a branch of the arch of the aorta; and in three cases the innominate artery and the left common carotid artery were given off from the arch by a common trunk.

In one body the abdominal aorta passed up on the right of the median line, and the inferior vena cava passed up on the left of the median line, as far as the point of origin of the superior mesenteric artery. Just beneath the margin of the latter vessel the inferior vena cava crossed the median line, in front of the aorta, and presented a groove for the lodgement of the superior mesenteric artery. (Fig. 2.)

In one subject the abdominal aorta divided at the lower border of the third lumbar vertebra.

In one body the abdominal aorta presented a remarkable bend without accompanying curvature of the vertebral column. (Fig. 3.)

In one case the gastric artery sent a branch to the liver and gave off the phrenic arteries. In this body the hepatic artery was very small.

In one instance the hepatic artery was a branch of the superior mesenteric artery; in another case a second hepatic artery came from the superior mesenteric artery in addition to the hepatic branch of the celiac axis.

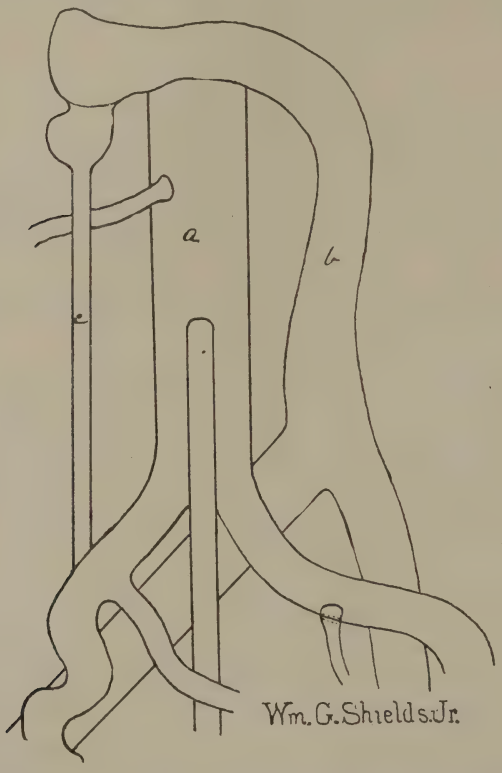

FIG. 2.—*a*, abdominal aorta; *b*, inferior vena cava; *c*, right spermatic vein.

In one body the right phrenic artery was a branch of the celic axis.

The anomalies of the renal arteries were unusually common, and some of them were of great interest. I propose, in the near future, to describe some of them at greater length. There were fourteen double renal arteries, ten of these were unilateral, six left, and four right, and the remaining four occurred as bilateral anomalies in two bodies.

In three bodies there were three left renal arteries.

Eight arteries passed to one horseshoe kidney.

In three bodies the common carotid artery divided above the upper border of the thyroid cartilage. The anomaly was unilateral in each case. In one of the cases the superior thyroid artery and a common trunk that subsequently divided into the lingual and the facial arteries were branches of the common carotid artery.

In one body the inferior thyroid artery was a branch of the common carotid artery. The anomaly was bilateral.

In one subject the external carotid, the internal carotid, and the superior thyroid arteries came off together from the common carotid artery. This anomaly was bilateral.

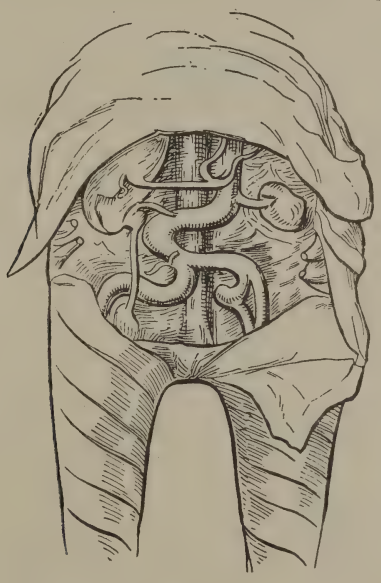

FIG. 3.

In one case there were two superior thyroid arteries coming from the right external carotid artery.

In one instance the superior laryngeal artery was a branch of the external carotid artery on both sides of the neck.

The lingual artery and the facial artery arose by a common trunk from the external carotid artery in seven instances; five of these were unilateral and the other two were bilateral.

The ascending palatine artery was a branch of the external carotid artery, on both sides of the neck, in one of the subjects.

The ascending pharyngeal artery was a branch of the occipital artery in two bodies; once on the right side and once on the left side.

In one case the right ascending pharyngeal artery was a branch of the internal carotid artery.

In one instance the posterior communicating arteries joined the tip of the basilar artery to complete the posterior portion of the circle of Willis.

In one body the subclavian artery did not give off a thyroid axis. The transversalis colli divided into the dorsalis scapulæ and the suprascapular arteries. The superficial cervical artery was a branch of the subclavian. The arrangement was bilateral.

In three bodies the suprascapular artery was a branch of the subclavian artery. Twice the anomaly was unilateral and once it was bilateral.

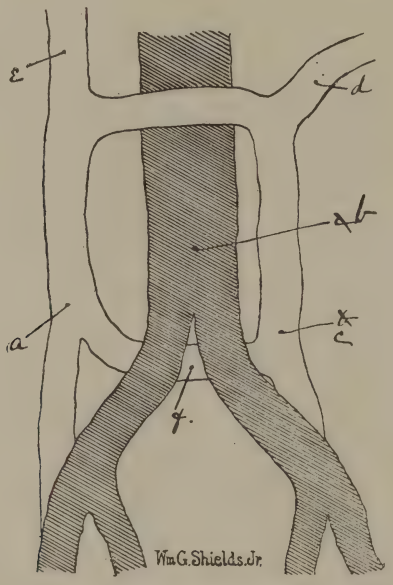

Fig. 4.

In two bodies the axillary artery divided into the radial and the ulnar arteries. In both instances the arrangement was unilateral. In one of these cases a common trunk from the axillary artery before division divided into the posterior circumflex, the subscapular, and the long thoracic arteries.

In one body the right axillary artery gave a common trunk that subsequently divided into the superior profunda and the subscapular arteries. The anterior circumflex, the posterior circumflex, and the inferior profunda arteries were branches of the superior profunda.

In three bodies the anterior and the posterior circumflex arteries

arose from the axillary artery by a common trunk. The anomaly was bilateral once and unilateral twice.

In one instance the superior thoracic, the long thoracic, the alar thoracic, and the acromiothoracic arteries were given off from a common trunk from the axillary artery. The arrangement was bilateral.

In one case the long thoracic, the subscapular, and the posterior circumflex arteries arose by a common trunk from the axillary artery on both sides of the body.

In one subject the superior profunda artery was a branch of the axillary artery on the right side. The anterior and the posterior circumflex arteries were branches of the superior profunda.

In one body both posterior circumflex arteries were branches of the subscapular arteries.

On the left side of one subject the subscapular, the superior thoracic, and the long thoracic arteries were given off from a common trunk that sprang from the axillary artery. The alar thoracic artery was quite large, the posterior circumflex artery was very small, and the ascending branch of the superior profunda was particularly large. On the right side of the same subject a common trunk from the axillary artery divided into the subscapular artery, the superior thoracic artery, the long thoracic artery, and the posterior circumflex artery.

The brachial artery presented a high bifurcation in twenty instances. Of these sixteen were unilateral and the other four were arranged as bilateral anomalies in two subjects.

In one arm, in which the brachial artery presented a high bifurcation, the common interosseous artery was a branch of the radial artery.

In one body, in which the right brachial artery divided in its normal position, the ulnar artery passed to the inner side of the forearm from its point of origin, lying above the pronator radii teres, the flexor sublimis digitorum, and the flexor carpi ulnaris muscles, and then passed down to the wrist lying on the flexor carpi ulnaris muscle. In this instance the common interosseous artery was a branch of the radial.

In one case the superior and the inferior profunda arteries of the right arm came from the brachial artery by a common trunk.

In one instance there was an arterial arch between the right ulnar and the right radial arteries, three centimetres below the bend of the elbow.

The common interosseous artery was a branch of the radial artery in four cases, two of which have been already referred to in the description of other arterial anomalies. The cases of this abnormity were all unilateral.

The common interosseous artery was a branch of the brachial

artery in two cases, both of which were unilateral. In one of these the common interosseous artery was given off at the lower border of the teres major muscle. In one case the common interosseous artery was wanting, and the anterior and the posterior interosseous arteries were given off as separate branches from the right ulnar artery.

In two bodies the left superficial palmar arch was formed by the union of the ulnar and the median arteries.

In one instance the right superficial palmar arch was absent, the median artery and the ulnar artery supplied the fingers without anastomosing.

The external circumflex artery was observed to be a branch of the superficial femoral artery in both thighs of one body.

In one case the superior vesical artery was a branch of the internal iliac artery before the latter had divided into an anterior and a posterior division.

The obturator artery was observed to be a branch of the external iliac artery five times. Once this anomaly was unilateral, the other four instances were arranged as bilateral anomalies in two different bodies.

In one subject the femoral vein in Hunter's canal was double; the anomaly was bilateral.

Anomalies of the Venous System.

An interesting venous anomaly is represented by Fig. 4. The right common iliac vein (*a*) passed up on the right of the abdominal aorta (*b*). The left common iliac vein (*c*) passed up on the left of the abdominal aorta and, after uniting with the left renal vein (*d*), passed across the abdominal aorta to unite with the right common iliac vein to form the inferior vena cava (*e*). The right common iliac and the left common iliac veins were connected by a transverse branch (*f*) that passed beneath the common iliac arteries and across the promontory of the sacrum.

ALUMNI NOTES.

Alumni Society of the Medical Department of the University of Pennsylvania Request for Information by the Catalogue Committee.

The committee desires a *short* biography of every medical alumnus, and this appeal is made for aid of graduates of the University in such compilation. The following is the form of biography desired:

(1) Name in full.
(2) Date and place of birth.
(3) Father's name and mother's maiden name.
(4) State matriculated from.
(5) Date of matriculation.
(6) Date of graduation.
(7) Title of thesis.
(8) Place of practice and present address.
(9) College attended.
(10) Titles.
(11) Publications and positions held.
(12) If ever in the United States service, state in what capacity and how long.
(13) If married, give maiden name of wife.
(14) Children's names, if any.
(15) If dead, give date and place.

Several thousand biographies have already been catalogued. The committee especially desires the histories of the graduates between the years 1781 and 1790, names of whom are found in the "Proceedings of the Annual Meeting of the Alumni Society for 1898," already widely distributed.

Data in reference to medical alumni serving in the French and Indian, the Revolutionary, the War of 1812, the Mexican, the Civil, and recent Cuban Wars, it is hoped, will soon be ready for collation. Assistance in this work is earnestly solicited.

R. G. Curtin, M.D., *Chairman.*
F. Savary Pearce, M.D., *Secretary.*

A Memorial Gate.

A memorial gate is to be placed on the campus of the University of Pennsylvania by the college Class of '72. The committee in charge,

it is announced, has determined on the corner of Thirty-fourth Street and Woodland Avenue as the site. The structure is to cost $3000. This will be the third memorial gate within the year, the first of which is now in course of erection by the college Class of '73, the first to graduate from the University in its present West Philadelphia home. This gate is at Thirty-eighth and Pine Streets. The Class of '72 was the last that was graduated from the University at its old location, at Ninth and Market Streets. The other gate is now being placed at Thirty-sixth and Spruce Streets, and is reared simply by students of the University, without distinction as to departments or classes.

The Meeting of the Philadelphia Alumni Society of the Medical Department of the University of Pennsylvania.

A "war-time" supper and smoker was held by the Philadelphia Alumni Society at the Philadelphia Bourse, on Saturday evening, November 19, 1898, Dr. W. M. Welch, presiding. Dr. John Guiteras, who was the first speaker, commented on the sanitary condition of the various camps, and the measures taken to prevent the spread of yellow fever. Dr. Edward Martin, of the Third Pennsylvania Volunteers, the next speaker, pointed out the necessity in future campaigns of sterilizing all the water consumed by the troops and also the necessity of establishing an army cooking school. Other speakers were Professor Wilmer, of the City Troop; Lieutenant Stout, of the Naval Reserves, and Raymond K. Farquhar.

Appointments.

Dr. Charles Harrison Frazier, of the Class of '92, has been appointed to the surgical staff of the Philadelphia Hospital, in place of Dr. J. William White, resigned.

Necrology.

Dr. Francis L. Haynes, Class of '71, died at Los Angeles, California, October 18, 1898.

Dr. Francis Lieber, Class of '91, acting assistant surgeon in the United States Army, died from typhoid fever at Fernandina, Fla., October 10, 1898.

Dr. William Patton Griffiths, Class of '81, died at Towanda, Pa., September 21, 1898.

Dr. Robert Loury Sibbet, Class of '66, died at Fairfield, Cumberland County, Pa., November 1, 1898.

EDITORIAL.

THE CAUSE AND TREATMENT OF SEPTIC PERITONITIS.

Septic peritonitis ranks as one of the most important of surgical conditions, both on account of its frequency and its fatality. For this reason it is important to review our knowledge of the subject from time to time.

First, as to the cause of this affection. A large amount of literature bearing upon this point now exists. The most recent investigations tend to show that all forms of peritonitis are the result of contamination with micro-organisms or their products. The cases heretofore termed "idiopathic" were so called because the source of the inflammation was not apparent. In the "traumatic" variety, the injury doubtless does nothing more than to establish a focus of lessened resistance, which permits the germs that reach this situation, either through the blood or otherwise, to develop. The "septic" and "suppurative" forms are, of course, of bacterial origin.

Among the micro-organisms that have been found associated with peritoneal inflammations by bacteriological examination may be mentioned, the colon bacillus, streptococcus, staphylococcus pyogenes albus, aureus, and citreus, pneumococcus, and bacillus pyocyaneus. It is still uncertain whether the typhoid bacillus can cause peritonitis, and it is claimed that the gonococcus of itself is incapable of exciting inflammation of the peritoneum. The list above given cannot be considered exhaustive in any sense, but it represents the more common, well-established, and generally accepted sources of the affection.

Of all the forms of peritonitis, that due to streptococcus infection is probably the most virulent, although there are cases, apparently due to the colon bacillus, that are almost, if not quite, as severe in type. The mildest form of peritoneal infection is that due to the staphylococcus. It must be borne in mind, however, that the virulence of any given infection depends upon other factors than the particular variety of germ from which it originated. These unfortunately are not yet understood. In addition, there is very frequently a mixed infection present, which, of course, would modify the conditions present in many important particulars. The additional fact must be borne in

mind that, in a case of mixed peritoneal infection, the germ that caused the inflammation may rapidly disappear, either on account of feeble resistance or by being destroyed by the accompanying micro-organism, the latter having greater resistance and more actively growing properties.

The commoner causes of bacterial infection of the peritoneum are rupture or perforation of the hollow viscera, penetrating wounds of the abdominal wall, including operations, and infection conveyed through the blood. It is a matter of common observation that peritonitis does not follow invariably upon exposure of the peritoneum to septic matter. This membrane is therefore capable, under favorable conditions, of disposing of a certain amount of purulent matter, and even bacteria, as well as fluids. This absorptive function has been made the subject of careful study by a number of investigators. Among the results of this work may be mentioned the discovery of stomata or open lymph-spaces, situated between the connective-tissue fibres of the peritoneum covering the central tendon of the diaphragm. It is at this point that the most rapid absorption takes place; solid particles being thus removed from the abdominal cavity as well as fluids. It is claimed that there is a current within the abdomen which tends to carry foreign substances from the pelvis towards the diaphragm, regardless of the posture of the individual. It has been shown experimentally that in peritonitis the lymph-spaces become filled with masses of bacteria and leucocytes, and as the result of mechanical obstruction and inflammatory action the power of further absorption is completely arrested. The products of bacterial growth, therefore, remain in the peritoneal cavity, and more or less rapidly poison the patient, according to the virulence of the particular case. As Treves and others have pointed out, death from peritonitis is the result of toxemia, and not of the inflammation *per se*. These facts would appear to demonstrate conclusively the value of establishing drainage as early as possible in all cases of septic peritonitis.

With this theoretical deduction clinical experience is in accord. A large number of cases of septic peritonitis is now on record in which life has undoubtedly been saved by incision and drainage. The latest statistics show that between 20 and 40 per cent. of recoveries may be expected from these operations. The results obtained appear to be improving each year, as the patients are operated upon earlier, and as the methods improve.

The technique at present accepted as the best consists of a large median incision, with a lateral incision, if needed, to give better access to any particular focus of disease, copious flushing of the cavity with normal salt solution at a temperature of 110° to 114° F., and the

establishment of free drainage. If the intestines are covered with lymph, it is recommended to cleanse them by sponging with sterile gauze pads. For this purpose it may be necessary to deliver the small intestine through the abdominal incision. During the cleansing process, the bowels should be kept covered with hot towels, exposing that portion under actual treatment only. Shock will thus be reduced to a minimum. If the intestine is so distended that it cannot be replaced within the abdomen, it should be aspirated, if the contents are chiefly gaseous, or incisions may be made which should be closed with Lembert sutures after the contents have been evacuated. The use of chemicals in the abdomen for the purpose of removing infection does not seem justifiable.

As has been stated, patients suffering from septic peritonitis are in a condition of toxemia, more or less profound, which clinically presents all the appearances usually attributed to "shock." It is a matter of common experience that patients in this state bear anesthesia and operations badly. Considerable nicety of judgment is therefore required to determine just how much may be done without adding to the gravity of the already threatening condition. The pulse should be constantly watched, inasmuch as sudden collapse may occur at any moment. Any tendency to failure of the circulation must be met immediately by the administration of full doses of strychnine and digitalis; in fact, it would seem to be good practice to anticipate such collapse by giving the proper dose of these drugs before administering the anesthetic. It is needless to say that evidences of heart-failure would demand a very speedy termination of the operation.

As to the best method of securing drainage of the abdominal cavity, most operators now prefer strips of sterilized gauze.

Sometimes, although the local conditions have been satisfactorily dealt with, the patient sinks rapidly from the fatal dose of the poison circulating in the blood. In such cases the intravenous injection of large quantities of normal salt solution may save life. An instance of this kind has recently been reported by Young, of Baltimore. After an operation upon an appendicular abscess, with evidences of beginning peritonitis, the patient's pulse and temperature gradually rose, and he became more and more prostrated. There were no distinct evidences of peritonitis, the condition appeared to be one of general septicemia. Venesection and saline intravenous injections were decided upon. One and one-half quarts were administered at one time, and two and a half quarts twelve hours later. Improvement followed in each instance, and was especially marked after the last injection. The reporter states that after that there was never any great concern about the boy's welfare. He made an uneventful recovery.

MEDICAL PROGRESS.

MEDICINE.

UNDER THE CHARGE OF

JAMES TYSON, M.D.,

ASSISTED BY

M. HOWARD FUSSELL, M.D., AND A. O. J. KELLY, M.D.

Accident Neuroses and Foot-Ball Playing.

Price (*Boston Medical and Surgical Journal*, April 28, 1898) believes that the real factor in all accident neuroses is the emotional element, and that the physical concussion plays a part only in so far that it intensifies the emotional effect, just as if we are startled by a sufficient noise close to the ear, we are still more startled if the noise is accompanied by a slap on the back. He says that it occurred to him in watching a foot-ball game; that if accident neuroses were due to physical trauma, pure and simple, they must as a consequence be present in foot-ball accidents. He therefore addressed a circular to a number of foot-ball teams of the country. Answer was received from six, and the reply in each case was that they had never known an accident neurosis to be caused by a foot-ball accident.

He believes the reason there is no mental shock in such cases is, first, the intense mental excitement and concentration of thought which fills the mind of the foot-ball player, and puts out every other form of mental excitement. And second, and perhaps more important, is the negative condition of the mind with which the player goes into the contest. He knows that accident may follow; he makes up his mind to the possibility of it, and therefore there is no shock or terror just preceding the accident, and, above all, he feels that the danger to his life is *nil*. In a railroad accident, on the other hand, the mind is not prepared and the emotions are extremely disturbed when the accident occurs.

Blood of Leukemia.

Bradford (*Clinical Journal*, June, 1898), in the course of a clinical lecture, made some remarks in regard to the blood of leukemia, which, while they are perfectly well known, seem well worth repeating.

(1) He called attention to the fact that there is a distinct anemia, and that some of the same serious symptoms of leukemia are dependent solely upon the anemic element.

In leukemia the number of red corpuscles is about half of the normal, and this is usually present throughout the entire course of the disease, whether it is treated or not.

(2) There is a characteristic increase of the white corpuscles; but it must be remembered that there is a marked increase of the white corpuscles in other diseases, and, consequently, an increase of the white cells, often with a reduction of the red cells, is not sufficient to make a diagnosis of leukemia.

Formerly, if you had from ten to twenty times the number of white corpuscles, the condition was called leukemia, but there are very much more important points,—namely, that in cases of leukemia the proportion existing between the different kinds of white corpuscles is altered; and, in the second place, that in the most common form of leukemia a large number of cells are free in the blood which formerly were not present; and, further, the increase of the white cells is not necessarily present throughout the whole course of the disease; but though the number of cells may not be increased, the quality changes probably always persist. That is the reason why it is necessary for leukemia to stain the blood.

In ordinary leucocytosis the increase in the corpuscles is restricted to the normal polymorphnuclear cells of the blood; in leukemia, on the other hand, the increase in one form is due to an increase of the lymphocytes. In normal blood these lymphocytes constitute 30 per cent. of the white corpuscles; in lymphatic leukemia there may be 90 per cent. In splenic leukemia, on the other hand, the increase of the white corpuscles is dependent mainly upon the increase in the multipartite polynuclear corpuscles with a large increase of myelocytes.

Serumtherapy in Malignant Endocarditis.

Moritz's *St. Petersburger medicinische Wochenschrift*, No. 19, 1898, says that the mortality in this condition is at least 80 per cent.; that all sorts of medications have been tried, but they all failed; he therefore determined to try the effect of antistaphylococcus serum.

A case of typical endocarditis, with a temperature-chart resembling that of the malignant form, came under his observation, and injections were used; the man recovered so far as the pyemic symptoms were concerned, and it was noticed that after each injection of the serum there was improvement in the temperature.

The Use of Iron and Opium in Bright's Disease.

Tyson (*Journal of the Medical Association*, July 23, 1898) says that in former times he has taught that the continued use of some of the preparations of iron is indicated in all cases of Bright's disease. Since he laid down that dictum he has come to the conclusion that in certain cases of Bright's disease, iron does a good deal of harm, and that it is indicated only in those cases where anemia exists, and it were better that this anemia should be determined by the use of the instruments now commonly employed. It may be laid down as a rule, to which there is almost no exception, that iron is *not* indicated in acute Bright's disease, but after the acute symptoms have passed away and convalescence has set in, iron is often useful.

It is always contraindicated in chronic interstitial nephritis; the disease in which it does the most good is chronic parenchymatous nephritis.

In regard to opium, it is contraindicated, first, in chronic interstitial nephritis. He regards the use of morphine in this form of disease as harmful

in the extreme, and hypodermic injections in such cases should be positively forbidden. He has often seen a very simple dose of opium cause a coma from which the patients have never survived, and it is especially in old persons where the nephritis is unsuspected, in which the accident occurs, hence the very great importance of examining the urine in old persons before administering the opium.

It is also contraindicated in cases of surgical kidney. The more extensive the destruction of the kidney, whatever the form of disease, the greater is the danger from the use of opium. The cases in which opium is of value are cases of acute nephritis and of puerperal nephritis, and it is often most useful in uremic convulsions. In any such cases of puerperal convulsions, unless we are certain that the condition is due to actual acute disease of the kidney, opium should not be used.

The Mosquito and the Malarial Parasite.

Manson (*British Medical Journal*, September 24, 1898). In a former edition of this journal an abstract was made, showing the views this observer holds in regard to the part that the mosquito plays as the habitat of the malarial organism outside of the human body. In that abstract it was also stated that Dr. Ross, of the English army, was making some observations in India, which it was hoped would throw a good deal of light upon this important subject.

Dr. Manson, in an article read before the British Medical Association, now gives the results of Dr. Ross's investigations in India.

He first found that 70 per cent. of the crescent form of parasite which entered the mosquito's stomach were transformed into the flagellated body; he also found that the flagella was all broken away, but he entirely failed to find what became of the flagella; they disappeared, and he did not know what became of them.

He fed a particular species of mosquito on the blood of a patient suffering from summer-autumn fever, which is characterized by the presence of the crescent in the blood. Two days after the insects fed he dissected them; he noticed embedded in the tissues of the stomach wall certain peculiar, oval, minute pigment-cells. The optical characters of the pigment were exactly those which are so characteristic of the malarial parasite. He also observed evidences of growth.

It is a well-known fact that birds in the tropics are often affected with the parasite in the blood which is analogous to the human malarial parasite.

He found that by feeding mosquitoes on birds which contained this parasite, he could, with the utmost certainty, get a crop of pigmented cells in the stomach of the mosquito. He repeated these experiences scores of times. He also fed mosquitoes on the blood of birds not affected by the parasite, and on normal human blood, and he failed to find pigment-cells in the walls of the stomach of any such mosquito. He also found that these pigment-cells occurred usually in the muscular fibres of the stomach, and that when the parasites grew they gradually formed a sort of a wart-like object on the outside of the stomach.

He has succeeded in demonstrating these cells in the stomach of the mosquito from the second day of their growth to the sixth day of their growth.

He found in the body cavity of mosquitoes which were affected with this

parasite innumerable small rod-like bodies. He also discovered that these same sorts of bodies were contained in the pigment-cells in the wall of the stomach, and they probably reached the body cavity of the insect by the rupture of these cells.

He also found that enormous numbers of these cells were found in the gland which is connected with the proboscis of the mosquito. He then took some sparrows, whose blood had been carefully examined, and he allowed the mosquitoes, which were unaffected and which he knew contained these rods, to feed on the sparrows. He then examined the blood of the sparrows, and found innumerable organisms in the corpuscles.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

ASSISTED BY

CHARLES H. FRAZIER, M.D., AND GEORGE M. PURVES, M.D.

The Treatment of Spinal Caries.

Horsely (*British Medical Journal*, October, 1898) contends that in the treatment of spinal caries there are two factors to be taken into consideration, one the tuberculous ostitis, the other the resulting deformity. Concerning the first, tuberculous ostitis, there seems to be no reason why it should not be treated in the same manner as tuberculous ostitis in other parts of the body,—namely, by exposure, removal of the diseased bone, and disinfection of the cavity. Since there are no special risks from aseptic operation on the spine, the conclusion is drawn that early operation with temporary fixation should be substituted for the present method of treatment by rest and fixation alone. The best possible method of obtaining temporary fixation is by means of anklets attached to the extremities of the lower limbs, with the employment of extension applied from the head as well as from the axilla. The treatment of abscess resulting from spinal caries depends upon the section involved. In the cervical region, postpharyngeal abscess should never be approached through the oral cavity on account of the pathogenic infection following, but through an incision corresponding to the line of the internal carotid artery. This incision would also allow for the removal of any enlarged carotid lymphatic glands. If the abscess be in the dorsal region, simple laminectomy is advised; when by an examination of the tissues in front of or at the side of the spinal column the abscess has been discovered, the removal of the pedicles of the vertebra should follow, in order to secure not only thorough drainage, but also thorough disinfection. Inasmuch as Calot's operation, rhachiclasis, neither deals with the abscess nor guarantees interruption of further progress of the disease, and possesses no advantage over simple laminectomy, but is simply an operation for the forcible reduction of the resulting deformity. It is not viewed with much favor.

The Treatment of Hydrocephalus by Intracranial Drainage.

G. A. Sutherland and W. Watson (*British Medical Journal*, October, 1898) advocate operation for the relief of hydrocephalus, whether congenital or not. The increase in the intracranial pressure is due to some obstruction to the flow of fluid from the lateral ventricle through the foramen of Magendie. If there were some means of communication between the lateral ventricles and the subdural space, the fluid would be absorbed and an equalization of intracranial pressure would be the consequence. This last observation is founded on the statement of Dr. Leonard Hill, who says that "the tension of the cerebro-spinal fluid and the cerebral venous tension are normally the same, and that the fluid will escape directly into the veins from the subdural and subarachnoid spaces at any pressure which is above that of the venous pressure." They cite three cases in which drainage was secured by introducing strands of catgut from the subdural space into the lateral ventricle. In two of these cases the diminution in the size of the head was continuous, and in a few weeks the spaces were obliterated, the bones were beginning to override, and the anterior fontanelle was much smaller and pulsating. Following the operation there was a marked asymmetry in the shape of the head, the side which had been operated upon being much smaller. This was remedied in one of the cases reported by a similar operation on the opposite side, since it was found that both ventricles could not be drained by introducing catgut strands in but one ventricle. In no one case operated upon was there any marked improvement in the mental powers. It may, perhaps, be taken as proved from their work that if permanent drainage can be obtained from the ventricles to the subdural space, nature will provide for the absorption of the fluid, and thereby prevent a recurrence of the evil results of intracranial pressure.

The Radical Cure of Spina Bifida.

Nicoll (*British Medical Journal*, October, 1898) has operated upon thirty-two cases of spina bifida, with seven deaths occurring within one month from the time of operation. If the cases were selected, the mortality of this operation would compare favorably with that of the radical cure of inguinal hernia; but to attain such results it would be necessary to reject for operation all cases in which the sac had ruptured or sloughed, as well as cases complicated with very pronounced hydrocephalus. His manner of operation is briefly as follows: The flaps for the closure of his wound are composed of skin, muscle, and connective tissue; the subsequent contraction of the flaps is relied upon to reduce the size of the tumor. Ligation of the sac will suffice, if the sac be small; otherwise, it must be closed with interrupted catgut sutures after excision of the redundant portion. No attempt is made to prevent the escape of the cerebro-spinal fluid, but rather, especially in cases of hydrocephalus, to facilitate the escape of such fluid by elevation of the head. In those cases in which nerve bundles were present on the interior of the sac, he removes such portions as are free, and then makes incisions parallel to the nerve cords that remain adherent to the sac. The result of such operations are: (1) A diminution in the size of the tumor mainly from the contraction of the flaps. (2) Perhaps an improvement in the paraplegia. (3) Relief or even cure of the hydrocephalic condition. The paper concludes by stating that in suitable cases of hydrocephalus the author proposes to try the following measures: (*a*) The establishment of drainage from the spinal cord, at the time of operation for spina bifida, into the

peritoneal cavity or into the cellular connective tissue or both. (*b*) Drainage of the cerebral ventricles externally or into the meninges. (*c*) The application of various solutions into the interior of the cerebral ventricles.

Varix: Its Causes and Treatment with Especial Reference to Thrombosis.

William H. Bennett (*Lancet*, October, 1898) says varicose veins may be divided into four classes:

(1) Congenital, in which heredity is undoubtedly a causative factor. This class may be divided into two subclasses,—namely, those connected with the subcutaneous veins only, and those having a direct or gross communication with the deep venous trunks.

(2) Those due to obstruction of blood-current, as, for example, when varicosity results from the pressure of the gravid uterus or other tumors. These cases may be only temporary, but if tension in the veins be sufficient and the valves give way, or if aseptic thrombosis forms immediately below the seat of pressure, permanent varicosity may result.

(3) Those due to strain without thrombi (this variety occurring in persons who are subjected to abnormal and especially sudden strain), or in persons whose occupations throw constant strain on the venous channels. There is sufficient reason to believe that the veins of such persons are defective either congenitally, from a previous strain, or from certain pathological changes.

(4) Those the result of thrombosis. This variety often follows strain or other injuries around the ankle-joint, and is due to thrombosis of the venæ comites of the posterior tibial artery.

The only immediate dangers to life from varicose veins are the occurrence of profuse bleeding from the thinned veins, the formation of thrombus, with extension into the deep channels, or the detachment of emboli. There are certain conditions which predispose towards thrombosis in a varix, such as cysts or acute bends in greatly dilated vessels, mobility of the part, and liability to injury. The occurrence of thrombosis in a varicose vein is less dangerous than in a normal one except in the region of the thigh and knee, where, from the mobility of the part or the liability to injury, serious and often fatal lesions may result. The tendency of thrombosis in varix to extend and invade the deep venous channels increases with the size of the vein, the absence or inadequacy of its valves, and especially with the existenc of a gross lateral communication between the point where the clotting occurs and the main deep venous channels in nearest relation to it.

So far as his experience goes, all grave cases of thrombosis in varix originate in a space bounded by two transverse lines, one about the middle of the thigh and the other three inches below the level of the knee-joint,—*i.e.*, at a point where the two main saphena veins join each other. This area he calls the "dangerous region of varix," for in it there are present all those conditions predisposing to the production of thrombus.

There are eight varieties of varix described as occurring in this region, which embrace three distinct classes of venous abnormality:

(1) Those in which the varix is local, the saphena being for practical purposes normal.

(2) Those in which the saphena is largely, if not solely, affected, its valves being wanting or inefficient.

(3) Those in which direct lateral communication exists between some portion of the abnormal veins and the nearest deep venous channel,—*i.e.*, either the femoral or popliteal, as the case may be. Under the treatment of varix, he advises in the early stages, when there is a tendency to edema, massage and gentle exercise; should there be any cystic dilatations or thrombi present this form of treatment would be contraindicated.

In order to discuss the operative treatment, we must recognize two classes:

(1) Where the defect is local and in isolated masses and dilatations. In such cases, when they are congenital and occur in persons of active habits, they should be removed.

(2) Where the varix is more or less general, the long saphena being especially involved.

In this class the operation indicated will depend upon whether the varix is limited to the leg or whether it affects the thigh as well. If the disease be limited to the leg, operation is not only useless but sometimes harmful, excepting when there is a cystic dilatation of the long or short saphena about the middle of the leg, in which cases operation is called for, especially in persons of active habits. When the varix extends to the thigh, a section of the saphena vein, extending from a point below the knee to a little above the lowest third of the thigh, should be removed.

Operation is also to be advised in cases of extensive varicosity of the lower limb, whose occupations or amusements are such as to throw great or sudden strain on the vessels, it being strongly indicated wherever there is a feeling of tension in the parts. Operation in varix, the result of thrombosis, is unjustifiable so long as the dilated veins are concerned in carrying on the collateral circulation. In the treatment of thrombosis of varicose veins, the removal at once, if practicable, of the contained clot is urgently advised, on account of the tendency of the clot to rapidly involve the deep veins. If complete removal be unadvisable, then ligation or resection of the vessel at the proximal side of the clot is the proper treatment. When pulmonary lesions have developed as the result of embolism, it is the duty of the surgeon either to remove the thrombus or by ligation to interrupt the passage of any more emboli.

THERAPEUTICS.

UNDER THE CHARGE OF

HORATIO C. WOOD, M.D., LL.D.,

AND

ARTHUR A. STEVENS, M.D.

The Physiological Action of Hydrastine Hydrochlorate.

Phillips and Pembrey (*British Medical Journal*, October 8, 1898) present the following study of the physiological action of hydrastine hydrochlorate upon the heart:

The direct application of two or three drops of one-half-per-cent. solution

produced a marked effect on the heart of a frog. The rate of contraction was diminished, but the force and duration were augmented. After the application of a few drops to the sinus of the frog's heart, strong faradic excitation of the vago-sympathetic produced no inhibition. The action of the vagus was also suspended in mammals by the direct application of the drug to the heart.

Action upon the Blood-Vessels.—The drug produced contraction of the arterioles, but this effect appeared to be brought about chiefly through the nervous system. There was, however, some local action, as shown by the application to an inflamed conjunctiva of a one-half-per-cent. solution.

Action upon the Nervous System.—Poisonous doses produced convulsions similar to those caused by strychnine. The convulsions are of central origin, for section of the nerves abolished them. In some cases the drug first caused partial paralysis, but this in most cases appeared to be due to the local action. The direct application to the frog's nerve and muscle of a one-half-per-cent. solution appeared to act first upon the nerve endings and then upon the muscle. A gastrocnemius muscle, placed in a watch-glass containing such a solution, quickly failed to respond to stimulation of the sciatic nerve, which was outside the liquid, but contracted on direct stimulation. Soon the muscle became more opaque in appearance and quite inexcitable. In both warm-blooded and cold-blooded animals fatal doses of the drug caused respiration to cease sometime before the failure of the heart's action.

Action upon the Digestive System.—No effect was observed upon the digestive system of the rabbit and cat, but in the cat there was marked salivation and vomiting, and loss of appetite for several days after a large dose of the drug.

Action upon the Kidneys.—The drug is rapidly excreted by the kidneys, for the urine passed within twenty-five minutes after the injection of ten grains into a cat caused typical convulsions in a frog, but a toxic quantity was still discharged on the second and third day. Normal urine when injected into a frog produced no effect.

Action upon the Generative System.—Experiments upon rabbits and cats failed to show any action of the drug in producing contraction of the muscle-fibre of the uterus.

Action upon Low Forms of Life.—Weak solutions—1 in 1000—quickly produced the disintegration of infusoria, and putrefaction was delayed or suspended in the bodies of animals poisoned by the drug.

A Preliminary Note on the Pharmacology of the Alkaloids derived from the Mescal Plant.

Dixon (*British Medical Journal*, October 8, 1898) presents a study on the physiological action of the alkaloids obtained from the mescal plant,—*Anhelonium Lewinii*,—a native of Mexico. Four alkaloids were obtained from the "mescal buttons," which possessed a remarkable similarity in their physiological action. Large doses caused nausea, vomiting, and diarrhea, in exceptional cases the stools being bloody. The chief therapeutic action of the drug is on the circulation. Small doses slow the heart and cause it to beat much more vigorously, whilst after a varying period, dependent on the dose, the beat recovers its normal rate, and generally exceeds it, but is never very rapid. There is also a considerable rise in arterial pressure. These results are probably due to (*a*) direct stimulation of the intracardiac ganglia and nerve terminals of the vagus, and (*b*) stimulation of the vasomotor centre. In toxic

doses paralysis of the nerve-cells occurs. In moderate doses the drug has no effect upon respiration. Toxic doses give rise to rapid, shallow respiration, and death subsequently results from failure of the respiratory centre. This is the main danger to be apprehended when experimenting with the drug in the human subject.

The effect on the nervous system varies considerably in different individuals. Generally there is a preliminary stage of excitement, talkativeness, and exuberance of spirits, followed by a stage of intoxication. During the stage of intoxication there are increased reflexes, wide dilatation of the pupils, auditory and nasal hyperesthesia, inco-ordination, tremors, blunting of cutaneous sensation, a rapid flow of ideas, with difficulty in concentrating the attention, and sensory hallucinations, especially visual.

Lethal doses produce complete paralysis, and death is due to respiratory failure. According to Dixon the important effects of these alkaloids in therapeutic doses would appear to be:

(1) A direct stimulation of the intracardiac ganglia.

(2) An initial slowing of the heart.

(3) An elevation of arterial tension.

(4) A direct stimulation of the brain and motor-centres of the cord, as shown by the increase in reflex excitability.

The Therapeutic Value of Recent Synthetic Analgesics: Their Benefits and Attendant Risks.

Phillips (*British Medical Journal*, October 8, 1898), at the last meeting of the British Medical Association, gave a summary of the actions of the recent analgesics, of which the following is an abstract. It is doubtful if, with one exception, the recent synthetic analgesics even approximate in their therapeutic value to the older ones, such as antipyrin, antifebrin, phenacetin, and exalgin. They group themselves into three main divisions, according as they are derived from chinoline, aniline, or salicylic acid. One alone is derived from chinoline,—namely, analgene. The derivatives of aniline are europhen, methylene blue, pyoktanin, agathin, malakin, neuroidin, lactophenin, apolysin, and citrophen; also a subgroup, consisting of pyramidon, salipyrin, tolipyrin, tolisall, and ferripyrin, compounds of antipyrin; and another subgroup, consisting of phenocoll, which is derived from phenacetin.

Salophen, salocoll, salipyrin, tolisall, malakin, and agathin are derived from both aniline and salicylic acid.

Analgene is not very powerful, but has the advantages of but slight toxicity, of tastelessness, and of easy solubility in acid media, or that being readily absorbed from the stomach, its action is rapidly produced. It is of special value in the treatment of painful affections of children. It has been proved of value in many diseases, among which are spinal caries and hip-joint disease. It has sometimes succeeded after antipyrin and phenacetin have failed. Its great evil depends on the destructive action it exerts on the red blood-corpuscles resulting in urobilinuria. Unpleasant accidents—nausea, vomiting, diarrhea, tremor, vertigo, and rashes—rarely occur.

Europhen is a powerful analgesic; it is said to have the activity of twice its weight of antipyrin. But it tends to interfere with the respiratory processes and to weaken the heart's action, and produce cyanosis and collapse. A negative advantage it has, in that it does not induce changes in the blood

or affect the kidneys. It has proved of especial service in the pain of orchitis. Although its toxicity, in carefully regulated doses, cannot be called great, yet it always produces extremely profuse perspiration, frequently a subnormal temperature, and occasionally cyanosis. The great disadvantage is the uncertainty of its action; it should therefore be given, in the first instance, in a tentative manner.

Methylene blue is a distinctly useful analgesic, particularly in functional neuralgias and in all kinds of nervous headache. It, however, changes hemoglobin into methemoglobin and causes irritation of the stomach, leading to vomiting and diarrhea, and also of the urinary tract. In large doses it has caused muscular paresis, loss of sensibility, and dyspnea.

Pyoktanin is not of sufficient therapeutic value to need more than a mere reference.

Agathin is said to be both slow in its action and unreliable in its effect. It has caused vomiting, diarrhea, insomnia, vertigo, unconsciousness, and even increase of pain. It is probably not worthy a place among valued analgesics.

The *compounds of antipyrin*—pyramidon, salipyrin, tolisall, and ferripyrin—have as analgesics merely a weak action of their antipyrin element. They are harmless, but not, as a rule, sufficiently powerful for the treatment of urgent pain.

Those which are derived from *salicylic acid as well as antipyrin*—namely, salipyrin and tolisall—are of use in painful states of rheumatic origin, but otherwise they are comparatively unimportant.

Malakin, being only slightly soluble in the ordinary menstrua, is slow in its action, very much slower than phenacetin, antifebrin, and antipyrin, and is in every way much inferior to them; with the exception, however, that it may be given for a long period without disordering digestion. It has been found of distinct service in acute rheumatism. It has no deleterious action on the blood or kidneys, being indeed practically free from risk.

Neuroidin is another remedy feeble in action, but harmless in doses sufficiently large to elicit its analgesic effect. It is, however, uncertain, and must be considered greatly inferior to phenacetin and antipyrin.

Lactophenin appears to be more active as a mere sedative to the nervous system (relieving irritability, restlessness, and depression) than as a pure analgesic. It is comparatively free from risk, although in medicinal doses it has produced vomiting, coldness, cyanosis, and collapse. But its great disadvantage is that it is inconstant in its analgesic effect, it has been known to fail completely in relieving the pain of neuritis and of intercostal neuralgia.

Citrophen has not so far been much used as an analgesic. Its applications are much the same as those of phenacetin, but its attendant risks are greater, while its benefits are much less distinct. It has exerted in medicinal doses a grave toxic effect on the blood and on the kidneys. It probably ranks very much below phenacetin.

Apolysin closely resembles phenacetin in its effects. It is said to be more powerful, but likewise more toxic, as it is more soluble than phenacetin and more prompt. It has been of especial benefit in migraine. It is well tolerated in large doses, continued over a long period of time without producing intestinal or renal irritation, or, indeed, any material injurious result. Its toxic effects are especially liable to occur if it is given on an empty stomach, or when that organ is producing an excessive amount of secretion. It is a remedy which may prove a valuable supplement to the phenacetin-antipyrin-exalgin group.

Phenocoll-hydrochloride is a derivative of phenacetin, and is said to be as powerful an analgesic as it, and being more soluble, it acts more quickly. But it is not so safe. Its special use has been in neuralgias brought on by cold,—that is, of rheumatic origin. But in children and in debilitated subjects, more especially in cases of advanced phthisis, it has caused alarming collapse with cyanosis. It is, however, a substance which may take an important place in the future as a means of relieving painful states generally. The *salicylate of phenocoll* or *salocoll* has no advantage over phenocoll, except that which is due to the action of its salicylic acid element.

Salophen is probably the best of the recent synthetic analgesics. Like salol, it is not decomposed until it reaches the intestine, so it does not produce any gastric disturbance as do the salicylates. Its toxicity is very slight, and is apparently due, when given in very large doses, to the salicylic acid it contains, but in medicinal doses it does not even produce the tinnitus and headache characteristic of the action of the salicylates. It has been of benefit in painful states of all sorts, but of special value in the neuralgias of children. When it is used to relieve the pains of influenza it is necessary to continue it for several days after the pains have been relieved.

Conclusions.—Salophen, phenocoll-hydrochloride, apolysin, and methylene blue are substances of high therapeutic value, and without attempting to arrange them in order, salophen appears to be of exceptional promise. Agathin, being slow, unreliable, and even dangerous in its action, should be avoided. Some hesitation should be exercised in employing analgene and citrophen, because of their toxic action on the blood; in using europhen and lactophenin, because of their inconstancy and tendency to produce collapse, and in choosing malakin, because of its tardy action. Pyoktanin, ferripyrin, pyramidon, salipyrin, tolipyrin, tolisoll, and even salocoll, although they may be well and safely used as substitutes for better remedies, *are unnecessary.*

OBSTETRICS.

UNDER THE CHARGE OF

BARTON COOKE HIRST, M.D.,

ASSISTED BY

W. A. NEWMAN DORLAND, M.D.

Placenta Previa, followed by Air Embolism.

Zorn (*Münchener medicinische Wochenschrift*, No. 18, 1898) has treated a woman in her twelfth pregnancy who was suffering from hemorrhage which began just before the expiration of term. Examination through the vagina showed an os which was almost fully dilated, while the finger could readily detect a mass of placental tissue filling the lower uterine segment. The labor-pains were very slight, and the fetal head lay above the pelvic brim. It was decided to terminate the pregnancy at once, the diagnosis of placenta previa having been made. The placenta was centrally implanted, and it was necessary

to perforate it before podalic version could be performed. It was finally extracted without any hemorrhage worth recording having occurred. The patient appeared in excellent condition until three hours after delivery, when she suddenly fell into a state of collapse. Stimulants were administered with good result, but at short intervals two relapses occurred, and one hour later the woman died. At a post-mortem examination no injuries to the genital tract were found, but in the right heart and uterine vessels a large quantity of air was found. No other pathologic conditions being discoverable, the diagnosis of air-embolism was made. Zorn has found but five other authentic cases of this accident recorded in literature.

Placental Transmission of Tuberculosis.

Auche and Chambrelent (*Münchener medicinische Wochenschrift*, Band vii, No. 4) have treated a woman pregnant at the seventh month and a sufferer from general tuberculous involvement. Owing to her diseased condition she had fallen prematurely into labor. Examination of the placenta revealed a large number of tuberculous nodules which contained numerous tubercle bacilli. Inoculations made with these nodules developed general tuberculosis in guinea-pigs and rabbits. The premature baby survived twenty-six days, and then a post-mortem examination showed tuberculous nodules in the lungs, liver, endocardium, and spleen, in all of which tubercle bacilli were found. Inoculations were also made from these organs, and the animals inoculated promptly developed general tuberculosis.

Gastro-Intestinal Hemorrhage in the New-Born.

L. A. Parry (*Lancet*, July 16, 1898) records the case of a child whose parents were healthy, and in whose family there was no history of hemophilia, who commenced to vomit blood seventy-two hours after birth; shortly afterwards three bloody stools were voided. The next two days there was no further vomiting of blood, but each day the infant passed four bloody stools. No appreciable cause for the melena could be discovered. The child was treated with very frequent five-grain doses of calcium chloride, at times at intervals of an hour. In three days' time 160 grains of the drug were administered. An improvement was noted in twenty-four hours from the beginning of the treatment, and all hemorrhage had ceased in forty-eight hours. In all other cases so treated by the writer no improvement had been noted. The secondary anemia was quickly corrected by the administration of iron.

Dry Labor.

Brodhead (*Medical Record*, May 14, 1898) has made an extensive study of this subject, and concludes that in at least 15 per cent. of labor cases there occurs a rupture of the membranes either prior to or during the occurrence of the first labor-pain. The fetal dangers of this accident are asphyxia and meningeal hemorrhage, while the maternal dangers are laceration of the soft parts, edema, pressure necrosis, hemorrhage, liability to sepsis, slower convalescence, and uterine rupture. As soon as rupture of the membranes occurs, careful examination should be instituted to ascertain the position of the umbilical cord, whether prolapsed or not, and the position of the fetus itself. After rup-

ture of the membranes has occurred it is better for the labor to begin as soon as possible. In order to secure this, it is well to administer at once a full dose of castor oil in glycerin, followed in a short time by a ten-grain dose of quinine sulphate, the latter to be repeated every three hours, while strychnine sulphate, one-thirtieth grain, should be given every two hours, unless unpleasant symptoms develop. Thorough asepsis must be observed before the vaginal examination is made. This may be accomplished by scrubbing the vagina with soap and water and afterwards with a 1 : 2000 solution of mercuric chloride; or the vagina may be douched with a hot solution of lysol every six hours, at least three quarts of the solution being used. Not only do these douches keep the vagina clean, but they soften the mucous membrane and stimulate the uterus to contraction. If the second stage of labor exceeds one-half hour without any progress, the forceps should be applied and the fetus extracted.

The Hygiene of Ophthalmia Neonatorum.

F. Dowling (*Cincinnati Lancet-Clinic*, June 11, 1898) remarks that in many cases of the purulent ophthalmia of the new-born the gonococcus cannot be demonstrated; there is no doubt, however, that the disease is always produced by infection of the eye with the organism. As to the precise time of infection opinions differ, whether during the process of parturition or subsequently. In normal labors, it does not seem probable that the infection occurs in the birth-canal, since the eyes of the babe are closed during birth; this is not true, however, in the case of instrumental or slow labors, and the greater frequency in male children may be explained by their larger heads and consequently the more difficult labors through which they must pass. Without a doubt some babes are born with the ophthalmia present. Whether the infection occurs at birth or subsequently is determined by the length of time elapsing before the development of the symptoms. The sources of late infection are numerous. Thus, the lids may be coated with the secretions of the vagina, and as often the same sponge and water are employed to bathe both the child's body and the eyes, an infection may thus occur. The disease may very readily be produced by the carelessness of the mother or nurse. It is favored by poverty and overcrowding, exposure to intense light, cold, draughts, etc. It is also much more prevalent during epidemics of puerperal sepsis. As to prophylaxis, there is nothing better than the 2-per-cent. solution of silver nitrate. Before it is used, however, the child's body should first be well washed and the eyes cleansed with fresh water and a clean piece of linen. A cleanly and well-trained nurse is essential for proper treatment. The eyes should be cleansed thoroughly hourly during the day and every two hours by night with a 10-per-cent. solution of boric acid; the lids then for the first week should be everted twice daily and touched with a saturated solution of boric acid; when the discharge has become profuse and purulent the lids must be pencilled over twice daily with a solution of silver nitrate, ten grains to the ounce; this is allowed to remain a few minutes and is then washed off with warm water; as the discharge diminishes the silver is applied but once daily; the corneæ, should they become affected, must be treated by the use of a two-grain solution of atropine. In the most favorable cases it is necessary to continue the treatment for from four to eight weeks.

GYNECOLOGY.

UNDER THE CHARGE OF

CHARLES BINGHAM PENROSE, M.D.,

ASSISTED BY

H. D. BEYEA, M.D., AND H. L. WILLIAMS, M.D.

Diabetes considered from a Gynecological Stand-Point.

Kleinwachter (*Zeitschrift für Geburtshülfe und Gynäkologie*, xxxvii, Heft 2) has contributed observations on the above subject, based on twenty-two original observations and a study of the literature. He finds that in diabetes mellitus menstruation is generally lessened in amount, but not always to a degree parallel to the amount of sugar in the urine. In 66 per cent. pregnancy is undisturbed, but in the remainder is prematurely terminated,—more often by miscarriage at the seventh or eighth month than by abortion.

The prognosis for the mother is always doubtful, but Kleinwachter holds that the induction of premature labor, which is advised by many authors, is contraindicated, as by such treatment the maternal chances are still further lessened.

Diabetic women should not nurse their babies.

Pruritus vulvæ, boils, condylomata acuminata are common diabetic symptoms.

The vaginal mucous membrane and the endometrium are sometimes affected. Only nine cases of diabetes insipidus were recorded as having any influence on the sexual apparatus. Eight of these women had borne children, and five were pregnant for a second time.

The general effect of diabetes insipidus seemed to be about the same, on the whole, upon the sexual functions as that of diabetes mellitus.

The Use of Ovarian Extract.

Jayle (*Revue de Gynécologie et de Chirurgie*, 1898, No. 4), in a paper on the above subject, comes to the conclusion that ovarian apotherapy is in reality a practical application of the theory advanced by Brown-Séquard in regard to the internal excretion of the ovary.

The number of cases which have been benefited by its use in the hands of a large number of investigators precludes the possibility of holding that the beneficial result has been a mere coincidence.

There is no doubt that ovarian extracts act directly for the relief of the disturbances attending the menopause, either natural or artificial. Its use is also valuable in amenorrhea, dysmenorrhea, and in anemia of ovarian origin. Good results have also been noted in some cases of simple oöphoritis. From a careful study of this subject, gynecologists have been led to recognize the important function which the ovaries play in preserving the general health, in consequence of which operations for the removal of the adnexa are undertaken by gynecologists with far greater conservatism than formerly.

The Remote Results of Curettage in Postpartum Infection.

Ferre (*L'Obstétrique*, May 15, 1898) reports twenty-five cases of postpartum infection, during the past five years, all successfully treated. From a study of his cases, Ferré concludes that curettage is the proper method of treatment in almost all cases. Intrauterine antiseptic injections should be reserved for the slightest cases of infection. Examining the ultimate results, he finds that curetting is more permanent in effect; that women who have been treated by injection only show many and varied lesions at a later period. It is not uncommon to find an enlarged uterus in a state of subinvolution and still suppurating. Perimetritis, and even chronic pelvic suppuration are also found. Yet these women are considered as *cured*. It is true that the temperature falls and the woman passes out of immediate danger, but it is an obstetric and not a gynecological cure. The *débris* removed even by a blunt curette shows the inadequacy of an injection. After an abortion, the use of the curette is especially necessary, for portions of the placenta or blood-clots are firmly adherent to the uterine wall, and can only be removed by the sharp curette. Ferré has a special series of blunt curettes made especially for the removal of non-adherent *débris*, and he considers their use an essential complement of intrauterine injections.

Torsion of the Uterus as a Result of Tumors.

Schultze (*Zeitschrift für Geburtshülfe und Gynäkologie*, Band xxxvii, Heft 2) gives us a critical study of twenty-six cases already published, and adds five new cases of his own. He finds that torsion of ovarian tumors and such myomata of the uterus as have pedicles is quite common, but that torsion of the uterus itself is comparatively rare.

Among the thirty-one cases studied, the torsion of the uterus was found to be due in fifteen instances to myomata, and in sixteen to ovarian tumors. During the puerperium the uterus was far more likely to undergo torsion from ovarian tumors, but in the myxomatous cases it occurred only once at this period. Schultze inclines to the belief that the real cause of the rotation is due to the restrictions imposed on the growth of the tumor by the walls of the pelvis and abdomen. The symptoms found in this condition depend in part on the interference of circulation, which may be so great as to lead to congestion, hemorrhage, necrosis, or even peritonitis, and partly upon the influence of the torsion upon neighboring organs, especially the bladder.

A diagnosis is frequently difficult. Anamnesis and the objective symptoms must be considered as well as the subjective symptoms. Attention is called to the fact that the ovaries are often not found in their normal position, and that the possibility of torsion of the uterus should be suspected in cases in which the symptoms, taken alone, simply indicate torsion of the pedicle. Relief is obtained usually only by laparotomy.

PATHOLOGY.

UNDER THE CHARGE OF
JOHN GUITÉRAS, M.D.,
ASSISTED BY
DAVID RIESMAN, M.D.

Changes in the Organs during the Course of Seventy-two Hours' Bicycling.

Regnaud and Bianchi (*Gazette des Hôpitaux*, September 6, 1898) examined the organs of three bicycle-riders by means of the phonendoscope. They found that during the course of the race the size of the liver, spleen, and stomach diminished, also the quantity of subcutaneous fat. These changes were due to insufficient ingestion of food and to a considerable loss of energy, augmented by the heat, to loss of sleep, and to emotion. The thoracic organs were not diminished in consequence of an afflux of blood produced by the labor. The continual movement of the limbs and pelvis, joined with the stooping attitude, elevated all the abdominal organs to a distance of from two to four centimetres. This caused an approach of the heart to the neck of from two to five centimetres. This may point to the therapeutic use of the bicycle in ptosis of the abdominal organs, in pleurisy, and in exaggerated vertical position of the stomach.

Erysipelatous Pneumonia.

Artaud and Barjon (*Gazette des Hôpitaux*, September 8, 1898) report a case of pneumonia developing a month after an attack of erysipelas. The physical signs and symptoms were atypical, and the sputum was found to contain not pneumococci but streptococci. The direct inoculation of sputum into the ear of a rabbit produced a typical erysipelas.

The Hereditary Transmission of Tuberculosis.

Ch. Hauser (*Deutsches Archiv für klinische Medicin*, Band lxi, Hefte 3 und 4) has made a careful study of the literature bearing on this question, reviewing critically (1) the cases of tuberculosis in the new-born and in fetuses; (2) cases of tuberculosis in calves and in fetal calves from tuberculous cows; (3) the studies of the occurrence of tubercle bacilli in the testicle and semen of men, and (4) of bulls; (5) the studies on the occurrence of tubercle bacilli in human and animal ovaries; (6) the experimental tuberculosis in animal fetuses, (*a*) in cases of maternal tuberculosis, (*b*) in cases of testicular tuberculosis of the male; (7) the experimental studies on the offspring concerning the transmission of tuberculosis. After judiciously sifting the material, he concludes as follows:

(1) There is undoubtedly an hereditary transmission of tuberculosis, both in man and in animals, on the part of the mother, the transmission occurring through the placental circulation.

(2) Not a single indubitable case of transmission of tubercle bacilli through the father is recorded, albeit it is demonstrated that in grave general tuberculosis bacilli are often excreted with the semen.

(3) In the cases of congenital or hereditarily transmitted human and animal tuberculosis, the mother suffered almost without exception from a most severe and generally fatal tuberculosis, just as up to the present bacilli have been found in the semen only in case of extensive general tuberculosis or tuberculous disease of the testicle.

(4) The hereditary transmission through the mother seems, in the case of the gravest general tuberculosis (miliary tuberculosis excepted), to occur only in about 10 per cent. of the offspring.

The facts just cited cannot explain the heredity of tuberculosis. The bacillary heredity exclusively through the mother is in strong contrast with the undoubted fact that a tuberculous father entails upon the offspring the same liability to tuberculosis as a tuberculous mother. Furthermore, bacillary heredity involves usually the liver and the portal lymph-glands, organs which are rarely primary seats of tuberculosis.

Studies on the heredity of tuberculosis should be made on those cases in which the disease of the parents is limited, for it is well known that the descendants may suffer from severe tuberculosis when that of the parents was mild; indeed, the disease may apparently skip a generation.

The author made a series of experiments of his own, using first rabbits and later guinea-pigs, in which he produced a localized tuberculous lesion, —not a single positive result was obtained,—*i.e.*, none of the offspring of the infected animals was born tuberculous; the young animals developed naturally, as did also the second generation. From all of the foregoing the conclusion is drawn that the theory of bacillary heredity of tuberculosis lacks all foundation, and cannot explain the family tendency to the disease, which the author admits.

How does he explain this latter tendency? It is due to a predisposition, a sort of idiosyncrasy, comparable to other idiosyncrasies that run in families, —as those to certain drugs, to certain articles of food, etc.

Tuberculosis is maintained, then, not through congenital transmission of the specific virus, but always through renewed infection with bacilli from the environment; this infection is facilitated by the existence of a specific individual susceptibility to the virus of the disease.

The Durability of Passive Diphtheria Immunity.

William Bulloch (*Journal of Pathology and Bacteriology*, October, 1898) found that almost the whole of the diphtheria antitoxin, introduced subcutaneously into animals, rapidly entered the blood, and disappeared rapidly after a day or two. The disappearance was not due to excretion by the kidneys. The remainder persists in gradually diminishing quantities for a period varying probably with the amount of antitoxin introduced.

The Influence of Sewer-Air on Lowly Virulent Diphtheria Bacilli.

S. G. Shattuck (*Journal of Pathology and Bacteriology*, October, 1898) cultivated lowly virulent diphtheria bacilli in broth over which fecal air was allowed to pass, and found that the germs did not, even after two months, acquire toxic properties.

MISCELLANEOUS.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $180, will be made on July 14, 1899, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the secretary of the college on or before May 1, 1899.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award.

The Alvarenga prize for 1898 has been awarded to Dr. S. A. Knopf, of New York City, for his essay entitled: "Modern Prophylaxis of Pulmonary Tuberculosis and its Treatment in Special Institutions and at Home."

Thomas R. Neilson,
Secretary.

POSTPONEMENT OF THE THIRD PAN-AMERICAN MEDICAL CONGRESS.

INTERNATIONAL EXECUTIVE COMMISSION OF THE PAN-AMERICAN MEDICAL CONGRESS.

Office of the Secretary, Cincinnati, November 5, 1898.

My Dear Sir,—I have the honor to announce that in April, 1898, I received from Dr. José Manuel de los Rios, chairman of the Committee on Organization of the Third Pan-American Medical Congress, a request that, in consequence of the then existing rebellion in Venezuela, no definite arrangements be made at that time relative to the

meeting of the Congress previously appointed to be held in Caracas in December, 1899.

The following communication relative to the same subject is just at hand:

"CARACAS, September 25, 1898.

"DR. CHARLES A. L. REED, Secretary of the International Executive Commission, Cincinnati, Ohio.

"DEAR SIR,—After having sent my communication dated April last, I find it to be my duty to notify you that, although the considerations pointed out in it have already ended, our country has been scourged by small-pox which has taken up all our physicians' activities and time, depriving them of going into scientific works. And as that state of mind of our people and government, after such calamities as war and epidemic, would greatly interfere with the good success of our next meeting, I beg leave to tell you, in order you will convey it to the International Executive Committee, that our government and this commission would be grateful to have the meeting which was to take place in Caracas in December, 1899, adjourned for one year later. I am, dear doctor,

"Yours respectfully,

"THE PRESIDENT.

"[Signed] DR. JOSE MANUEL DE LOS RIOS."

In accordance with the request of the government of Venezuela, and of the Committee on Organization, the Third Pan-American Medical Congress is hereby postponed to meet in Caracas in December, 1900.

For the International Executive Commission.

CHARLES A. L. REED, *Secretary.*

BOOK NOTICES.

OPERATIVE GYNECOLOGY. By HOWARD A. KELLY, A.B., M.D., Fellow of the American Gynecological Society, Professor of Gynecology and Obstetrics in the Johns Hopkins University, etc. Two volumes, with 24 plates and 590 original illustrations. New York: D. Appleton & Co., 1898.

Dr. Kelly has given to the medical profession a work that far exceeds any that as yet has been issued in his special department.

Evidently he fully realizes that the time has passed in which the medical reader will be satisfied with a mere compilation of bare facts and a reduplication of antiquated drawings, which are more often noted for their inaccuracy than for their worth. In the two volumes of his "Operative Gynecology" the author has carefully covered the entire field of the subject; every detail is fully described in a clear though concise manner, while the text is easily read and is interesting throughout. He deserves the highest commendation for the magnificent work which he has produced. It would be difficult to indicate any particular chapter worthy of special mention; they are all of the best, but there are some features that may merit individual acknowledgment. The section on the topographical anatomy of the female pelvis and pelvic organs is, in its clear and definite description, a marvel of its kind presented in lucid and irreproachable English, and far excelling the work of Savage, which for years was regarded as the classical work on the subject. The section embracing the affections of the ureters, as may be readily understood, has received especial attention at the hands of the author, the discoverer of the methods employed. The article covers over 100 pages, illustrated by numerous well-executed drawings. The second volume commences with the twentieth chapter of the work. In a well-written section, full of practical thoughts, in which nothing is left untouched of all the varied complications that may arise after abdominal operations, much new and interesting material is presented of the utmost value, not only to the young operator, but to the older one as well. This volume, as is the first, is replete with good, sound, and conservative treatment. Especially to be commended is the section on ovariotomy, which leaves nothing to be desired, and is worthy of the most careful perusal. The drawings and plates throughout both volumes are marvels of accuracy and artistic work. It may be claimed that many of them are ideal in their delineation, but this is vastly more to be desired than the older inaccurate plates that deface so many otherwise instructive volumes. Finally, we feel that Dr. Kelly's book should not only be found on the shelves of the specialists, but every general practitioner should have it at hand for ready reference. The book will undoubtedly become one of our classical works on the subjects of which it treats.

A System of Practical Medicine by American Authors. Edited by Alfred Lee Loomis, M.D., LL.D., Late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M.D., Professor of Medicine in the Cornell University Medical College, etc. Vol. IV. Philadelphia and New York: Lea Brothers & Co., 1898.

This important work is completed by the present volume, which is almost wholly devoted to diseases of the nervous system. The chapter on diseases of the peripheral nerves is by Frederick G. Finley. M. Allen Starr wrote the section on the diagnosis and localization of spinal-cord diseases and anterior poliomyelitis. Christian A. Herter contributed the sections on diseases of the membranes of the spinal

cord, diseases of the blood-vessels of the spinal cord, hereditary ataxic paraplegia, syphilis, and tumors of the spinal cord, syringomyelia and malformations of the spinal cord and diseases of the medulla and pons. Edward D. Fisher is the author of those portions devoted to acute and chronic myelitis, Landry's paralysis, cerebral palsies of infancy, infantile convulsions and eclampsia. The subjects of posterior, primary lateral, and postero-lateral spinal sclerosis are discussed by D. D. Stewart. The general discussion of diseases of the brain has been assigned to J. T. Eskridge, who has also written upon encephalitis, multiple sclerosis, chronic hydrocephalus, abscess of the brain and atrophy of the brain. Diseases of the meninges of the brain and thrombosis of the sinuses of the dura mater are described by F. T. Miles, and diseases of the blood-vessels of the brain by F. X. Dercum. Epilepsy and paralysis agitans and tremors in general are considered by Frederick Peterson. Chorea and choreiform affections and tetany are contributed by Charles L. Dana. Neuralgia and migraine by William H. Thomson, and neurasthenia by James J. Putnam. The occupation neuroses are described by Charles K. Mills, and the traumatic neuroses and sexual psychoses by Morton Prince. Hysteria and the disorders of sleep are from the pen of Wharton Sinkler. The following chapters are contributed by the editor, W. Gilman Thompson: sea-sickness, rheumatism, gonorrheal arthritis, arthritis deformans, gout, lithemia, obesity, and scurvy. The subjects of acromegaly, Reynaud's disease, angio-neurotic edema, facial hemiatrophy, scleroderma, and vertigo are described by James Stewart. Melancholia and dementia are discussed by William Broaddus Pritchard, mania by Willis E. Ford, paranoia by William Noyes, general paresis by Landon Carter Gray, and idiocy and imbecility by Pearce Bailey. Frederick G. Finley contributed the sections devoted to Thomsen's disease, congenital paramyotonia, primary multiple myositis, myositis ossificans progressiva, and osteomalacia. Rhachitis is described by A. Jacobi.

Such is the scope of this volume and the *personnel* of its contributors. Of the latter, it is scarcely necessary to say that all are well-known workers in this field of medicine, while many have been leaders in shaping the neurological progress of this country. This being true, it is needless to say that the various subjects have been presented in a manner that leaves little, if any, basis for criticism. The general practitioner will find this a most satisfactory work in its special field. All of the four volumes have maintained a high standard of excellence, and the editors and publishers are to be congratulated upon the success of their efforts to portray the present advanced state of medical science in this country.

Lectures on Renal and Urinary Diseases. By Robert Saundby, M.D. (Edin.). With numerous illustrations. Second edition. Philadelphia: W. B. Saunders, 1897.

The above work represents the first appearance in a single volume of Dr. Saundby's lectures on Bright's disease and lectures on diabetes. As most of the matter has appeared elsewhere and has met

with general approval, an extended criticism at this time seems unnecessary. The first section deals with Bright's disease, and includes the general anatomy of the kidney, the pathology of albuminuria, the pathology of dropsy, the pathological relations of tube-casts, cardiovascular changes, the pathology of polyuria, the pathology of uremia, retinal changes, infective nephritis, lithemic nephritis, obstructive nephritis, complications of chronic Bright's disease, and the treatment of Bright's disease.

The second section treats of the clinical examination of the urine; the third, with diabetes mellitus and diabetes insipidus; and the fourth, with miscellaneous renal diseases, such as stone, hydronephrosis, pyonephrosis, pyelitis, hematuria, and hemoglobinuria.

A well-selected bibliography will be found appended to each article. The various theories which have been advanced in explanation of the different phenomena observed in these diseases have been carefully considered, and in order that the opinions of the author may be clearly set forth, each chapter concludes with a brief summary of accepted facts. It will be observed that the author's classification of Bright's disease is a very simple one, being based upon the etiological factors engaged in its production. Thus the forms usually described under the terms acute and chronic parenchymatous nephritis are designated acute and chronic infective nephritis, chronic interstitial nephritis is termed lithemic nephritis, although the author recognizes the possibility of lead, alcohol, and chronic heart-disease being etiological factors. Under the head of obstructive nephritis are included those forms of Bright's disease which result from some obstruction to the outflow of renal secretion. That acute nephritis can result from exposure to cold and wet without the intervention of micro-organisms or their toxins is not admitted. The subject of renal tuberculosis receives scant attention, not more than five lines being devoted to it. The chapter on diabetes mellitus is by far the best in the book, and is well worth a careful perusal. Whatever shortcomings the book possesses are in the line of omissions, but these are few in number when compared with the work as a whole, which must be regarded as a scholarly presentation of the subjects with which it deals. The text is interspersed with numerous illustrations, four of which are well-executed colored plates, depicting the retinal changes observed in Bright's disease and in diabetes.

The Physician's Visiting List for 1899. Philadelphia: P. Blakiston's Son & Co.

The features of this Visiting List which have made it popular with physicians for nearly fifty years have not been changed in the present edition. Its convenience and compactness will recommend it to those not familiar with past editions; to those who have employed this Visiting List heretofore the simple announcement of its appearance for 1899 will be sufficient. As in the past, this List is arranged in various styles to accommodate entries for 25, 50, 75, and 100 patients per day or week. There is also a monthly and a perpetual edition.

THE MEDICAL NEWS VISITING LIST FOR 1899. Weekly (dated for thirty patients), monthly (undated for 120 patients per month), perpetual (undated for thirty patients weekly per year). The first three styles contain thirty-two pages of data and 160 pages of blanks. The sixty-patient perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil, and rubber. Philadelphia and New York: Lea Brothers & Co.

The excellent features of this Visiting List are so widely known and appreciated that more than an announcement of the new edition would be superfluous. The present volume contains thirty-two pages of printed data, including an alphabetical table of diseases with approved remedies, a table of doses, sections on examination of urine, artificial respiration, incompatibles, poisons, and antidotes, a diagnostic table of eruptive fevers, and a full-page plate showing at a glance the incisions for ligation of the various arteries. The List is issued in four styles, adapted to any system of records and any method of keeping professional accounts. It is durably and handsomely bound in the size of a wallet for the pocket. When desired a ready reference thumb-letter index is furnished, which is peculiar to this List and an economizer of time.

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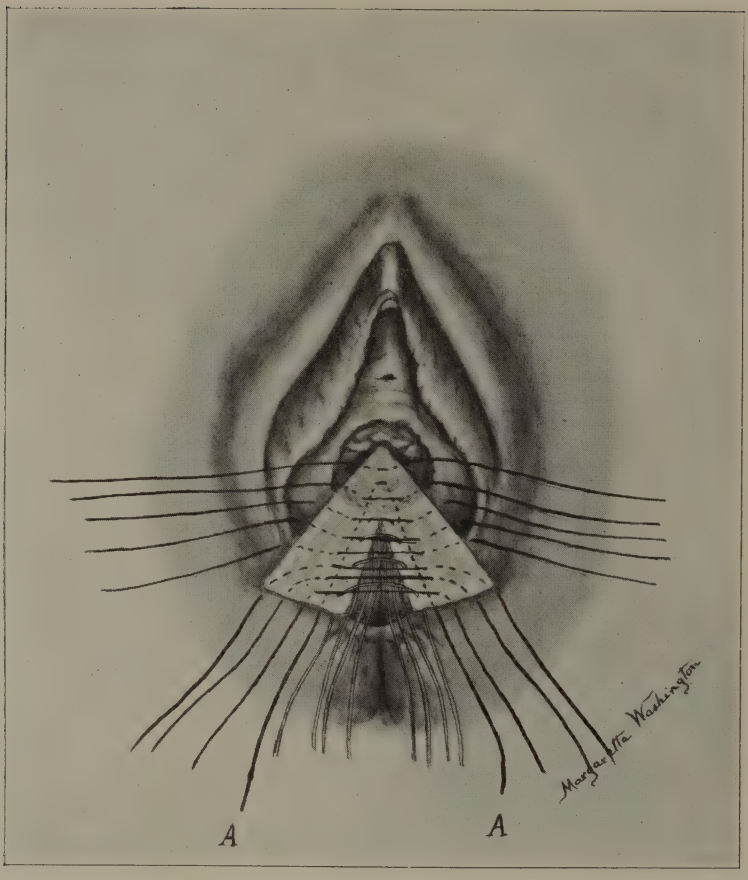

The sutures for a complete laceration of the perineum in either a primary or secondary operation. *A*, *A*, the barrier or splint stitch.

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JANUARY, 1899.

ROYAL COLLEGE OF SURGEONS OF ENGLAND
25 JAN 99

A RELIABLE TECHNIQUE FOR THE REPAIR OF COMPLETE LACERATIONS OF THE PERINEUM.

By Barton Cooke Hirst, M.D.,

PHILADELPHIA,

Professor of Obstetrics, University of Pennsylvania.

Every year for several years past the writer has had two or three, sometimes four, operations for complete lacerations of the perineum in cases operated on by others without success, besides his own cases in consultation of primary and secondary repair of tears through the sphincter. It appears, therefore, that the technique of these operations is not as thoroughly understood as it might be, or as if the surgeons who fail to secure uniformly good results, some of them expert gynecologists, would do well to adopt a plan of operating that could be depended upon in every case. For ten years the writer has employed a method which has not failed in a single instance, as far as he knows, to restore the sphincter perfectly without a recto-vaginal or a recto-perineal fistula. The illustration shows the method of introducing the sutures, four of which are usually knotted in the rectum. Above the rectal sutures a triangular stitch is inserted somewhat resembling the Emmet suture for securing the ends of the sphincter, but placed above the sphincter, which is brought together by the rectal stitches, and acting simply as a splint to the rectal wound, an additional support to the sphincter stitches and a barrier between the rectal and vaginal sutures. The vaginal wound is united by vaginal and perineal sutures, as in the Hegar operation for lacerated perineum. This mode of suturing is much superior to the Emmet operation for complete lacerations. The latter, indeed, has given, in the writer's experience, a larger proportion of failures than almost any other plan.

This was also the experience of the late Dr. Goodell. In a very extensive denudation it is often an advantage to whip the whole denuded surface together by a two-tier running catgut suture, beginning in the upper angle of the vaginal denudation, running down the deeper part of the wound, just short of the rectal mucous membrane, and returning in the vagina to a point opposite the original insertion, so that the two ends are joined by a single knot. Naturally, the catgut suture must be inserted after the interrupted silkworm-gut sutures are all in place. The latter are knotted in the rectum, shotted in the vagina and perineum. If the catgut supplementary stitch is not employed, it is convenient to tie the rectal stitches from above downward in regular order, then to shot the triangular splint stitch, converting the case into one of a simple Hegar operation for lacerated perineum. The vaginal and perineal sutures are inserted after the rectal and splint stitches have been fastened.

There are certain principles essential to success in all operations for complete tears which must not be neglected in the operation just described. The bowels must be thoroughly emptied and carefully irrigated before the operation, so that there shall be no evacuation of feces to embarrass the operator and to infect the wound. The sphincter muscle should be stretched; the denudation must be extensive and must be carried so low that there is no possibility of missing the ends of the sphincter. It would cause surprise were the writer to enumerate the operators who have failed on this point. The two lowest rectal stitches which catch the sphincter ends must take the deepest possible bite, and before joining them several cross cuts with a knife or scissors should be made upon the ends of the muscles to lay bare their fibres. As a test whether the muscle is caught by the stitches or not, two tenacula should be hooked into the tissues between the stitches and pulled upon. If they have the ends of the muscle in their grip, it may be made to play between them under the skin of the anus.

In the after-treatment of the patient a choice should be made between two procedures: either to keep the bowels fluid and moving from the first or to lock them up for two weeks. The former is much the better plan and is adopted by the writer almost invariably. Two or three glasses of Carlsbad water with a teaspoonful of Sprudel salts daily secures the desired result—about three liquid stools a day—without irritating the alimentary tract. The diet should be strictly liquid. There are some obstinately constipated patients, however, in whom a quantity of purgative medicine is required so excessive that the stomach and bowels rebel. This point should be tested by a purgative course for several days before the operation. If it is found that the woman probably will not bear for two weeks or more the amount of purgative

medicine required to produce three liquid stools a day, she should be given after the operation a half grain of opium extract twice daily, her diet should be rigidly restricted to skimmed milk, clear soup, and a little tea, and her bowels should be kept unmoved for fourteen to sixteen days. Then the operator himself should inject the rectum with a solution of ox-gall and with sweet oil and should irrigate the bowel; a course of calomel, followed by elaterium, should be administered, so that the bowels shall be thoroughly evacuated before the stitches are removed.

In removing the rectal stitches it is convenient to place the woman in the knee-chest posture and to expose the suture knots with a very small rectal speculum, illuminated by an electric head-light.

A PLEA FOR THE MORE GENERAL EMPLOYMENT OF MICROSCOPICAL EXAMINATION OF TISSUE AS A MEANS OF DIAGNOSIS IN MALIGNANT DISEASES OF THE UTERUS AND VAGINAL OUTLET.

By H. D. Beyea, M.D.,

PHILADELPHIA,

Assistant Gynecologist to the University Hospital; Instructor in Gynecology at the University of Pennsylvania; Assistant Surgeon to the Gynécéan Hospital.

The object of this paper is to call attention to the present status of microscopical examination as a means of diagnosis in malignant diseases of the uterus and vaginal outlet, and to explain its worth and proper application.

It will be remembered that a few years ago there existed not a little scepticism, and that there was much controversy, regarding the value of this method of diagnosis as an adjunct to clinical diagnosis in gynecology.

As soon as it was known that it was possible to cure carcinoma of the uterus by operative methods the early diagnosis of the disease became one of the most important factors in advancement. This importance of early diagnosis was particularly emphasized after the publication of the anatomical and histological study of forty-three cases of carcinoma of the uterus by Ruge and Veit, in 1881, and again with the perfection of the operation of hysterectomy about ten years later. It

was naturally concluded that such a diagnosis could be best and only positively determined by the microscopical examination of tissue removed from the site of suspicious disease, and the method was accordingly given a very thorough trial.

It was the custom to a greater or less extent among gynecologists to send a portion of excised tissue from all doubtful cases of carcinoma of the cervix and body of the uterus to a recognized pathologist, depending upon the report received for the determination of further action as to treatment. Unfortunately it was soon found that such a report, though made by the very best pathologist in the community, was often most untrustworthy; that it often led the surgeon to perform an unnecessary and serious operation, or, on the other hand, being influenced by the report, he saw the patient whom he had declared free from a malignant disease die unaided. In other words, the surgeon was surprised in many cases when the report was positive to find no malignant disease after the uterus had been removed, and when the report was negative, he was often also surprised to see his patient go beyond help. As a result of such experiences, showing again and again the untrustworthiness of microscopical diagnosis, the method was in some quarters very generally discarded, and instead the diagnosis was determined from a study of clinical symptoms and a physical examination, or other methods which would show macroscopical changes, supposedly malignant, were employed. These methods too, although an improvement, were also untrustworthy and faulty in many respects, as will be shown.

As determining malignant disease of the body of the uterus hemorrhage, pain, a fetid discharge, and an enlargement of the uterus in women approaching the menopause, and in or after the climacteric period constituted the important symptoms. Even the presence of one or two of these symptoms was sufficient. Such a patient was subjected to the operation of hysterectomy, and in not a few instances the surgeon found some form of benign disease of the endometrium or was satisfied from the macroscopical appearances without microscopical examination that there was present at least beginning malignant disease. Again, depending on these advanced symptoms and waiting until they became prominent, the more conservative operator, knowing that other diseases than those of malignant character were capable of producing the same symptoms, allowed the disease to progress so far that when operation was attempted other structures were involved, and the removal of the uterus was contraindicated. That such a method is untrustworthy is apparent.

Another method which was a distinct advance over the above, but which was practised by few, was the digital examination of the uterine

cavity. The method is to dilate the cervical canal, introduce the finger, and thus palpate the interior of the uterine cavity for malignant growths. This likewise often failed, both because of the finger being unable to always detect a diffuse form of malignant disease, except where nodulation or roughness was present, and also because a polypoid endometritis or a mucous or fibroid polyp was taken for malignant growths. To say the most, a diagnosis could only be made when infiltration was far advanced. The uterus here also was sometimes unnecessarily removed, and at other times allowed to remain until far advanced disease manifested itself. Since the untrustworthiness of microscopical examination seemed to depend upon the failure to gain tissue from an area in the uterine cavity which was causing symptoms, Gotschalk, Veit, and Fritsch advised that the cervical canal be dilated, the finger introduced, and detecting a hypertrophied portion of endometrium, the specimen for microscopical examination be removed from this area by the curette. But this method, although a still further advance, was nearly as faulty as the others. The examination of one portion of tissue from one area of the endometrial uterine wall allowed the error of there being present in another part of the endometrium malignant disease while the examination showed only benign disease. Others advised the removal of two or three strips of endometrial membrane by means of the curette, but this method had the same faults as the last, being, if anything, less sure.

In patients with malignant disease of the cervix uteri the condition was allowed to progress until definite and characteristic objective signs and clinical symptoms had appeared, often until the disease had involved the vagina and parametrial tissue, before a diagnosis was determined upon and the proper treatment followed. Or through changes in the cervix uteri, combined with clinical symptoms, which might be those of a beginning malignant disease, very often unjustifiable, the serious operation of hysterectomy was performed. Again, and as in malignant disease of the body of the uterus, the more conservative waited until too late, the disease advancing beyond the uterus before characteristic symptoms arose.

In new growths of the vagina and vulva the same holds true, but here the actual determination of the form of the disease, whether malignant or benign growths, specific granulomata or inflammatory, is not of such grave importance, since the treatment, unless the growth be syphilitic, chancroidal, or inflammatory in origin, is the same,—that of excision. It is, however, of importance to determine the presence of malignant disease even here in order to carry out the more extensive operation in malignant disease, and conclude a favorable or unfavorable prognosis.

With the present attainments in surgical technique and the development and perfection of operative methods, the operation of panhysterectomy is accomplished with little danger to life, but statistics show (those of Winter, Russell, and others) that in at least 50 per cent. of the cases operated upon the patient sooner or later suffers and dies from a recurrence of the disease. According to Winter 75 per cent. of the women having carcinoma of the uterus appear too late for the operation of hysterectomy to offer any promise of cure. This is due greatly to the fact that the patient herself is often unaware of the presence of the disease until pain and other advanced symptoms appear, and to some extent, also, to the general practitioner, who neglects to make a physical examination of those that do appear; treating his patients symptomatically.

It is difficult to say how these latter factors of seeming neglect are to be eradicated, but with the present development of medical science, and knowing that the cure of such diseases of the uterus can now be accomplished, an earnest and continual attempt should be made to save more of these most unfortunate women. I think one can say that some are neglected that might be saved. From the above methods described it is shown that there is not a little chance for error in diagnosis and treatment. Even the expert diagnostician using this method acknowledges that he is conscious of his inability always to conclude an early diagnosis. If there is to be an advance in the treatment of these fatal diseases and more lives are to be saved, it is clear that it must be in the direction of early diagnosis.

Therefore, with this end in view, every practitioner of medicine should make himself thoroughly familiar with and be ever on the outlook for the earliest symptoms which would suggest even the possibility of beginning malignant disease. He should earnestly impress his patient with the importance of vaginal examination and avail himself of every method of diagnosis, and at once advise the proper treatment. Under all circumstances and by the use of all methods the diagnosis should be made at the first examination. Particularly should students of medicine be taught the early symptoms, the best methods of diagnosis, and the importance of the proper treatment. They should too be taught the pathology of the diseases of the genital tract.

As already said, the clinical symptoms, the most painstaking vaginal examination, and the methods of digital examination are frequently insufficient to determine an early diagnosis of malignant disease of the uterus and vaginal outlet. At least a positive diagnosis cannot be made, they are worthless in determining the form of malignant or non-malignant disease, and they offer no proof that the disease is malignant. The only method of diagnosis which can, to my mind, practically always

give positive results, especially where the disease is in its formative stage and the uterus be removed without danger of recurrence, is that of microscopical examination in conjunction with clinical symptoms and careful vaginal examination. From year to year the scepticism regarding the value of this method has disappeared among not a few practitioners of this branch of surgery; and to-day its certainty is well established.

In my own experience, during the last five and a half years, the method has never failed to be most satisfactory and a very sure guide in every instance, and I am sure this experience coincides with that of all others in this country and abroad who have studied microscopical diagnosis and applied it in their clinical work in gynecology. Regardless of these facts, the old disbelief in the method continues among some, and the clinical methods described are still employed to a very great extent.

The scepticism which existed in the past regarding its continual efficiency was partly due to faulty and careless methods of gaining tissue for examination, and also due to the fact that the pathological examination was usually made by one who was not thoroughly familiar with the normal histology, and particularly with the pathological histology of malignant and other diseases of the female genital tract. Methods of gaining tissue were faulty, in that the tissue which might be causing symptoms was not removed and examined. The tissue was either not removed from the site of the disease or the extent of excision was not sufficient. The general pathologist, like the general practitioner as compared with the specialist, cannot be as familiar with the finer points of differential diagnosis between the various diseases of this part of the body; the pathology and disease of which differ in many respects from that of any other part, and require prolonged special study. It is therefore easily comprehended why his opinion is not so trustworthy. That this is true will be acknowledged by many general pathologists. In many parts of Europe, particularly Germany, there are men, such as Ruge, who have devoted much of their medical lives to the study of the pathology of the female genital tract, but in this country and England, with few exceptions, this branch of pathology is not well studied nor is it applied to practical diagnosis to sufficient extent. The failure to recognize the importance of such study is a strong cause for the continuing scepticism regarding the worth of microscopical diagnosis.

In order to appreciate its value, whether microscopical examination can always be of the greatest assistance in the diagnosis of malignant disease of the uterus and vaginal outlet, and to what degree such diseased tissue may be removed for examination, it is of the utmost

importance that some study be made of the normal histology of the uterus and tissues of the vaginal outlet and the pathological anatomy of malignant diseases of these parts. The mucous membrane of the uterine cavity, from the internal os to the opening of the Fallopian tubes, is composed of utricular tubular glands, separated by what are called the endometrial stroma-cells. These glands sometimes extend slightly into the muscle tissue.

The gland tubules are lined with cylindrical ciliated epithelial cells, also the surface of the endometrium is covered with these cells.

The thickness of the normal endometrium is from a twelfth to twenty-fifth of an inch.

The cervical mucous membrane, extending from the external os upward to the internal os, is composed of glands (the Nabothian glands) which extend deeply into the dense connective tissue of the cervix. These glands appear as large crypts which divide into acini, or they are flask-shape with contracted openings, or again they are tubules which extend deeply into the tissue without dilatation. These glands are lined and the endometrial surface is covered with cylindrical epithelial cells. The so-called mucous membrane of the portio vaginalis, and the vagina is covered with squamous epithelial cells, the deeper of which are often short cylindrical-shaped cells. The skin of the vulva is also covered with these same cells, and resembles the skin in other parts of the body.

With the exception of the very rare cases of endothelioma of the cervix, sarcomatous degeneration of a fibroid tumor, and possibly carcinoma arising from the gland-structure found in some fibroid tumors, as described by Recklinghausen, primary malignant diseases always have their origin in the mucous membranes described,—carcinoma, adenocarcinoma, and malignant adenoma from the epithelial cells of the mucous membrane and sarcoma from the stroma-cells of the same.

Carcinoma of the body of the uterus, including the other above forms of carcinoma, occurs in four macroscopical or clinical varieties, each arising from the epithelial cells of the utricular glands or surface of the endometrium. (1) A diffuse carcinoma, which rapidly involves the entire endometrium. It not infrequently produces some irregular thickening of the surface. It slowly infiltrates the muscle wall, and thus causing inflammatory reaction, thickening, and enlargement of the entire uterus results. (2) A circumscribed carcinoma in which one area of endometrium is involved, the remaining continuing healthy. This area may be less than the size of a cent. (3) A polypoid carcinoma, in which a circumscribed area of endometrium, the seat of carcinoma, develops a polyp which more or less fills the uterine cavity.

(4) Chorioepithelioma, which arises from the internal surface of the uterine wall and follows an abortion.

Carcinoma of the cervix or cervical canal is seen in three macroscopical forms, which either arise in the superficial portion of the gland or surface epithelium of this endometrium, or from the acini or fundi of the glands. Those that arise superficially grow superficially, and those that arise from the deeper portion of the glands grow as a nodule in the cervical tissue. These forms may be described as (1) infiltrating carcinoma—where the entire cervix is found thickened, or one wall or a part of a wall is thickened. It appears as a nodule in the cervix, and this nodule is often covered with intact endometrium. Its origin is the fundi or acini of glands. (2) Carcinoma which originates in the deeper portion of the gland and quickly becomes superficial and appears on the endometrial surface as a nodule. (3) A carcinomatous ulceration of the superficial cervical endometrium, which rapidly destroys the tissue surrounding the cervical canal.

Carcinoma of the portio vaginalis, that which develops from the squamous epithelial cells of the mucous membrane of the vaginal cervix, is described in three forms: (1) A polypoid or cauliflower carcinoma, growing from either one or both lips or from a portion of a lip of the cervix. (2) An infiltrating carcinoma, which causes thickening and sclerosis of the whole or only a part of the surface. There is an indistinct loss of substance, but rarely the mucous membrane may be intact. (3) A carcinomatous ulceration of the surface of the cervix in relation with the external os. There is marked loss of substance and a cavity is produced in this relation. (4) A carcinomatous growth and ulceration of the surface of the vaginal cervix, which has a tendency to infiltrate deeply and quickly extend to the vagina.

Primary carcinoma of the vagina and vulva originates from the surface of the mucous membrane, is usually localized, and tends to ulcerate, or, much more rarely, it appears as a tumor.

Sarcoma of the uterus, as said, arises from the stroma-tissue, cervical tissue-substance, or just beneath the mucous membrane of the vaginal cervix. From the body of the uterus it may develop as a diffuse sarcomatous growth of the endometrium or as a sarcomatous degeneration of a fibroid tumor. All forms tend to grow towards the uterine cavity.

Sarcoma of the cervix and portio vaginalis grows as polyps, and thus superficially. They are extremely rare.

Sarcoma of the vagina, also extremely rare, appears as a flat ulcerating infiltration or as round tumors or warty growths growing from the labia, clitoris, or the vestibule around the urinary meatus.

It is shown from this description of the normal histology of the

uterus and vaginal outlet and the pathological anatomy of the malignant diseases of these parts that, no matter what may be the form of malignant disease, it practically always has its origin in the structures which are sufficiently superficial to allow the gaining of the tissue which is causing the symptoms, and must represent the disease. It also shows the importance of the fact that the person removing such tissue for examination must be familiar with the pathological anatomy of the disease in order to gain diseased tissue and make a sufficiently deep excision.

Provided the person removing such tissue is familiar with these facts and he removes sufficient tissue there is little chance for error. As in all other forms of diagnosis there is a possibility of error, in that the first portion of tissue may not include the disease, but there is always sufficient time to repeat the examination if suspicious symptoms continue. This possibility of mistake is, however, so small that it is scarcely to be considered, nor should it adversely influence the opinion of any surgeon.

In carcinoma of the body of the uterus the method I would advise ("Malignant Adenoma of the Corpus Uteri and its Diagnosis," *American Journal of Obstetrics and Diseases of Women and Children*, Vol. xxxiii, January 2, 1896) is that the uterine cavity be thoroughly and systematically curetted, and every portion of endometrial tissue be removed, washed free from blood-clots, and placed at once in 95-per-cent. alcohol or 10-per-cent. formalin solution for microscopical examination. The endometrium should be removed in long strips, each strip representing this tissue from the fundus to the internal os and its entire thickness. In order to accomplish this a sharp curette should be employed (the Sims sharp loop curette). This instrument should be gently carried to the fundus uteri, borne well against the internal uterine wall, and with one sweep the strip should be removed and carried to a receptacle containing water. This procedure should be repeated, going over the anterior and posterior and lateral walls systematically, until all the endometrium from these surfaces is removed. Then the Martin spoon-curette should be introduced and the fundus uteri carefully curetted. It is advisable to go over the surface of the endometrium twice, each time with care. There is a slight element of danger of perforation of the uterus where the disease is advanced, but in advanced cases it is not necessary to curette so severely. By this method, it will be understood, all of the endometrium is removed well down to the muscle wall, and considering the fact that all forms of carcinoma or malignant disease develop in this tissue, it must necessarily represent the disease, if it is present.

All of the portions of tissue should be prepared for microscopic

examination, although many preparations may be necessary, and they should be carefully studied.

Gessner, in a paper entitled "Ueber den Werth und die Technik der Probecurettements," read before the Berlin Obstetrical Society more recently (March 13), also advises this as the surest and best method of making a positive diagnosis. He was able to make a correct diagnosis in fifty-eight consecutive cases, in many of which other methods had been tried and had failed.

It is advisable, and I think very necessary, to etherize the patient, and thoroughly dilate the cervical canal to carry out this thorough curettement.

In suspected malignant disease of the cervical canal and portio vaginalis the various diseased surfaces should be carefully palpated and inspected (remembering the anatomy of malignant disease of these parts), and from each suspicious area a wedge-shaped portion of tissue should be excised. The depth of excision must of necessity be sufficient to warrant the removal of diseased tissue or the nodule palpated. A roughened, infiltrated, or nodular area should be caught with a double or single tenaculum and the excision made with a sharp pair of scissors or scalpel. Where the suspected carcinoma arises in the cervical canal and from the superficial endometrium, tissue may often be best gained by means of a sharp curette. An anesthetic is not necessary for this excision or curettement.

Such excised tissue should be prepared for microscopical examination, and must show the malignant disease, if it be present. In malignant diseases of the vagina and vulva the same method should be employed.

This has been the plan of diagnosis which we have employed at the University and Gynécéan Hospitals during the last five and a half years (at least seventy-five cases), and it has ever given positive results.

If the technique of the methods are carefully followed, judgment being used in the gaining of tissue, and the pathological examination is made by one familiar with malignant and other diseases of these parts, it will certainly give most satisfactory results, and there will be no room for criticism.

REPORT OF CASES TESTED FOR THE WIDAL REACTION, AT ST. JOSEPH'S HOSPITAL.[1]

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AND

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The immobilization and agglutination of typhoid bacilli, which occur when a pure culture of the bacillus is added to the serum of a typhoid fever patient, forms the basis for the Widal reaction.

This reaction was first noted by Pfeiffer, but was first applied to practical clinical uses by Widal. At about the same time Grünbaum described the same method, but his work was not as accurate and conclusive as that of Widal.

Inasmuch as there had previously been no definite means of diagnosing typhoid fever from various other febrile affections, the proof of the value of the Widal reaction was awaited with great interest by the medical profession in general.

The reaction has now been thoroughly tested, and though there are still some who do not place reliance in its diagnostic value, the reports of a great majority of the investigators show it to be of the greatest practical importance.

Of its practical diagnostic value we can cite no better example than a case which was admitted to St. Joseph's Hospital, December 5, 1898. The patient was a young woman, 19 years of age, who had given birth to a child November 9, 1898. She had apparently made a good recovery when, on November 29, she was taken sick with a high fever and great headache. On vaginal examination, the uterus was found to be greatly enlarged, the os patulous, cervix enlarged and injected, and there was present considerable bloody discharge. There was also great tenderness both on vaginal and abdominal palpation. The clinical symptoms were not at any time typical of typhoid fever, and, though the spleen was markedly enlarged, the history of the case, the nature of the temperature, the absence of rose-colored spots, and the result of a vaginal examination, pointed to the case being probably septic. On the seventh day of the disease the Widal test was tried, and gave a positive reaction in three minutes, with a dilution of one

[1] From the service of Dr. Joseph Sailer, Pathologist to the hospital.

part of serum to fifty of water. The patient died December 9, 1898. At the post-mortem examination the spleen was found to be greatly enlarged, soft, and with a dark surface. The mesenteric glands were greatly enlarged. Typical typhoid ulcers were found in the duodenum, follicular ulcers were found in the duodenum, and a few follicular and round ulcers in the cecum. The uterus was twice the normal size, the cervix was cyanosed, the endometrium was thickened and rough, with the site of the placental attachment anteriorly plainly marked. Tubes and ovaries were perfectly normal. Cultures of the typhoid bacillus were obtained from the spleen, mesenteric glands, and bile.

In spite of the clinical symptoms, the Widal test showed the case to be typhoid fever, and the post-mortem examination confirmed this diagnosis beyond any possibility of doubt. Without the Widal reaction the case could never have been positively diagnosed during life.

Inaccuracy in the application of the method has been the cause of many errors heretofore, and we believe that, with the exercise of proper care, an absolutely accurate result can be obtained.

Among twenty healthy persons and those with other febrile diseases Pick found not a single positive reaction. Twenty cases of typical typhoid gave a positive reaction. In sixteen the reaction was immediate. The earliest period of reaction was the third day, one case giving a negative reaction on the seventh day, negative on the ninth day, and typically positive on the eleventh day. Twelve suspicious and doubtful cases were examined. Three gave a positive reaction, and the course of the disease confirmed the results. Nine were negative ; of these three proved to be pneumonia, two tuberculosis and the spleen gave no reaction.

A notable case was that of a woman, aged twenty-three years, who had been ill sixteen days, with a temperature of 39.3° C., bronchitis and constipation ; the spleen was not enlarged and there were no rose-colored spots. On the twenty-first day she gave a positive Widal, a general low typhoid developed, and she died on the twenty-fourth day. The autopsy showed no typhoid intestinal lesions, no splenic enlargement. Cultures gave the typhoid bacillus, and blood from the veins and extract of the lymph-glands gave positive reactions. Extract from spleen gave no reaction.

The length of time through which the reaction persists after convalescence varies greatly. In some cases the reaction has disappeared within eighteen days, while in others it has persisted for ten years.

The method employed in the investigation of the Widal reaction in the laboratory of St. Joseph's Hospital differs in technique from that ordinarily employed,—the so-called "dry method." Instead of being allowed to dry, the blood is diluted in its fresh state with a known quan-

tity of distilled water. The pipette used for counting white blood-corpuscles and a small test-tube previously sterilized constitute the apparatus required.

Method.—After cleansing the part and obtaining the blood in the usual manner, the blood is drawn into the pipette to the point marked 0.5 c.m. ; the pipette is then transferred to distilled water, and this is drawn up to the point marked 11 c.m. This gives a dilution of one part of blood to twenty-two parts of distilled water, or one part of serum to about fifty parts of water. After being thoroughly mixed in the pipette the fluid is blown into the test-tube, and is ready for examination. A drop of the diluted blood is placed on a clean cover-glass by means of a platinum loop ; to this is added a pure culture of the typhoid bacillus ; the cover-glass is then inverted over a concave glass slide, is sealed by means of vaseline, and is then examined under the microscope with the oil immersion lens. Fifteen minutes is the time allowed for the reaction to take place.

The principal advantage of this method is that, by means of the pipette, an absolutely accurate dilution of the blood is obtained, while in the dry method the dilution can only be guessed at.

Out of 103 cases from St. Joseph's Hospital, in which the Widal reaction was taken, the following results were obtained :

Eighty-nine cases of typhoid gave eighty-eight positive reactions, —98.9 per cent. Fourteen cases not typhoid gave fourteen negative reactions,—100 per cent.

In every case, without exception, which was not typhoid a negative reaction was obtained.

In the single case of typhoid which gave a negative reaction the blood unfortunately was examined but once, so that it is possible the reaction may have developed after the first test was made. In a few of the cases the blood during the first days of the disease gave a negative reaction, but developed a positive reaction as the disease progressed, so that it is not safe to be content with a single examination when a negative reaction is obtained at the first examination.

In six of the cases the reaction was obtained before the rose-colored spots developed, thus being of distinct clinical value.

The average time required for the reaction to occur was five and a half minutes from the time the culture was added to the diluted serum. Twenty-four cases gave the reaction inside of one minute, many of these being instantaneous.

In two of the cases twenty minutes were required, with a dilution of one part of blood to twenty-two parts of water ; in these cases a dilution of one part of blood to eleven parts of water gave the reaction within the fifteen minutes usually allowed.

In one case it was impossible to obtain a reaction with a dilution of one part of blood to twenty-two parts of water, but with a dilution of one to eleven the reaction was obtained.

In our investigation the reaction has been called positive only when there has been *distinct* immobilization and agglutination. The presence of a few micro-organisms clumped together with the remainder of the field in motion and not clumped was never considered a positive reaction.

In our cases the average day on which the reaction occurred was the thirteenth. However, as many of the cases did not arrive at the hospital until comparatively late in the disease, we have no doubt the reaction would have shown earlier had we had the opportunity of taking it.

The earliest day on which it occurred was the fifth ; thirty-eight cases occurring by the tenth day. The other cases varied from this to the twenty-eighth day.

In a quantitative determination the reaction was obtained in one case with a dilution of one part of serum to 400 parts of water, the reaction occurring within fifteen minutes.

Summary of Typhoid Fever Cases giving a Positive Reaction on First Examination.

Case I.—S. L. ; time required, one minute ; day of disease, tenth ; spots present.

Case II.—J. F. ; time required, one minute ; day of disease, seventh ; spots present.

Case III.—M. W. ; time required, one minute ; day of disease, tenth ; spots present.

Case IV.—E. D. ; time required, one minute ; day of disease, tenth ; spots present.

Case V.—W. H. ; time required, one minute ; day of disease, tenth ; spots present.

Case VI.—S. K. ; time required, one minute ; day of disease, tenth ; spots present.

Case VII.—O. B. ; time required, two minutes ; day of disease, tenth ; spots present.

Case VIII.—N. P. ; time required, seven minutes ; day of disease, nineteenth ; spots present.

Case IX.—J. T. T. ; time required, fifteen minutes ; day of disease, fourteenth ; spots present.

Case X.—F. B. ; time required, three minutes ; day of disease, eleventh ; spots present.

Case XI.—J. G. ; time required, four minutes ; day of disease, tenth ; spots absent.

Case XII.—B. G. ; time required, one minute ; day of disease, fourteenth ; spots present.

Case XIII.—L. W. K. ; time required, one minute ; day of disease, fourteenth ; spots present.

Case XIV.—W. F.; time required, one minute; day of disease, twenty-first; spots present.

Case XV.—C. H. M.; time required, three minutes; day of disease, tenth; spots present.

Case XVI.—C. J. O'M.; time required, five minutes; day of disease, fourteenth; spots present.

Case XVII.—E. K.; time required, one minute; day of disease, twenty-first; spots present.

Case XVIII.—A. W.; time required, one minute; day of disease, fourteenth; spots present.

Case XIX.—P. C.; time required, two minutes; day of disease, tenth; spots present.

Case XX.—W. E. S.; time required, three minutes; day of disease, fourteenth; spots present.

Case XXI.—G. L. D.; time required, five minutes; day of disease, fourteenth; spots present.

Case XXII.—E. S.; time required, one minute; day of disease, tenth; spots present.

Case XXIII.—A. C.; time required, one minute; day of disease, eighteenth; spots present.

Case XXIV.—L. M.; time required, seven minutes; day of disease, tenth; spots present.

Case XXV.—W. C.; time required, two minutes; day of disease, sixth; spots absent.

Case XXVI.—E. M.; time required, two minutes; day of disease, tenth; spots present.

Case XXVII.—K. M. G.; time required, one minute; day of disease, seventh; spots present.

Case XXVIII.—E. S.; time required, two minutes; day of disease, twelfth; spots present.

Case XXIX.—W. L.; time required, one minute; day of disease, eighth; spots present.

Case XXX.—H. H.; time required, three minutes; day of disease, eighth; spots present.

Case XXXI.—J. D.; time required, ten minutes; day of disease, tenth; spots absent.

Case XXXII.—W. P.; time required, twelve minutes; day of disease, tenth; spots present.

Case XXXIII.—C. C.; time required one minute; day of disease, tenth; spots present.

Case XXXIV.—E. D.; time required, five minutes; day of disease, eighth; spots present.

Case XXXV.—L. F. E.; time required, twelve minutes; day of disease, seventeenth; spots present.

Case XXXVI.—H. L. A.; time required, one minute; day of disease, fifteenth; spots present.

Case XXXVII.—J. E. S.; time required, five minutes; day of disease, tenth; spots present.

Case XXXVIII.—J. F. G.; time required, three minutes; day of disease, twentieth; spots present.

Case XXXIX.—G. F. B.; time required, eight minutes; day of disease, thirteenth; spots present.

Case XL.—F. L. ; time required, five minutes ; day of disease, twelfth ; spots present.

Case XLI.—C. A. F. ; time required, five minutes ; day of disease, twentieth ; spots present.

Case XLII.—F. P. B. ; time required, one minute ; day of disease, twenty-first ; spots present.

Case XLIII.—S. W. ; time required, three minutes ; day of disease, tenth ; spots present.

Case XLIV.—F. W. ; time required, five minutes ; day of disease, eleventh ; spots present.

Case XLV.—F. W. ; time required, one minute ; day of disease, seventeenth ; spots present.

Case XLVI.—S. P. ; time required, one minute ; day of disease, eighth ; spots present.

Case XLVII.—G. W. G. ; time required, ten minutes ; day of disease, fourteenth ; spots present.

Case XLVIII.—A. E. ; time required, five minutes ; day of disease, fifteenth ; spots present.

Case XLIX.—E. K. ; time required, eight minutes ; day of disease, tenth ; spots present.

Case L.—J. C. ; time required, ten minutes ; day of disease, eleventh ; spots present.

Case LI.—M. B. ; time required, three minutes ; day of disease, fifteenth ; spots present.

Case LII.—M. R. ; time required, eight minutes ; day of disease, twenty-first ; spots present.

Case LIII.—R. W. ; time required, three minutes ; day of disease, tenth ; spots present.

Case LIV.—S. R. ; time required, five minutes ; day of disease, eighth ; spots present.

Case LV.—J. P. B. ; time required, five minutes ; day of disease, ninth ; spots present.

Case LVI.—Mrs. F. ; time required, five minutes ; day of disease, twentieth ; spots present.

Case LVII.—R. R.; time required, eight minutes ; day of disease, twenty-first ; spots present.

Case LVIII.—T. D. ; time required, one minute ; day of disease, twenty-first ; spots present.

Case LIX.—C. W. ; time required, one minute ; day of disease, fifteenth ; spots present.

Case LX.—Mrs. M. ; time required, ten minutes ; day of disease, tenth ; spots present.

Case LXI.—J. B. ; time required, eight minutes ; day of disease, eighth ; spots present.

Case LXII.—Mrs. C. ; time required, one minute ; day of disease, twenty-eighth ; spots present.

Case LXIII.—A. W. ; time required, fifteen minutes ; day of disease, eighth ; spots present.

Case LXIV.—Mrs. G. ; time required, fifteen minutes ; day of disease, fifteenth ; spots present.

Case LXV.—M. M. ; time required, five minutes ; day of disease, fifth ; spots absent.

Case LXVI.—Mrs. F. ; time required three minutes ; day of disease, seventh ; spots absent.

Case LXVII.—Mrs. T. ; time required, fifteen minutes ; day of disease, fourteenth ; spots present.

Case LXVIII.—M. McG. ; time required, ten minutes ; day of disease, twenty-first ; spots present.

Case LXIX.—M. P. ; time required, fifteen minutes ; day of disease, eighteenth ; spots present.

Case LXX.—G. K. ; time required, five minutes; day of disease, tenth ; spots present.

Case LXXI.—H. B. C. ; time required, three minutes ; day of disease, eighth; spots present.

Cases showing Positive Reaction on Second or Third Examination.

Case LXXII.—O. S. ; reaction negative on twelfth day ; time required, thirty minutes ; spots present. Positive on seventeenth day ; time required, ten minutes ; spots present.

Case LXXIII.—H. M. ; reaction negative on eighth day ; time required, thirty minutes ; spots absent. Positive on twelfth day ; time required, eight minutes ; spots present.

Case LXXIV.—J. L. ; reaction negative on tenth day ; time required, thirty minutes ; spots present. Positive on fifteenth day ; time required, five minutes ; spots present.

Case LXXV.—J. C. ; reaction negative on twelfth and fourteenth days ; time required, thirty minutes ; spots present. Positive on eighteenth day ; time required, fifteen minutes ; spots present.

Case LXXVI.—F. W. ; reaction negative on fourteenth day ; time required, thirty minutes ; spots present. Positive on eighteenth day ; time required, one minute ; spots present.

Case LXXVII.—S. W. ; reaction negative on fifteenth day ; time required, thirty minutes ; spots present. Positive on twenty-first day ; time required, fifteen minutes ; spots present.

Case LXXVIII.—J. M. M. ; reaction negative on tenth day ; time required, thirty minutes ; spots present. Positive on fifteenth day ; time required, five minutes ; spots present.

Case LXXIX.—M. A. ; reaction negative on fifteenth day ; time required, thirty minutes ; spots present. Positive on twenty-first day ; time required, five minutes ; spots present.

Case LXXX.—H. R. C. ; reaction on eleventh and fifteenth days (dil. 1–22) ; time required, thirty minutes ; spots present. Positive on eighteenth day (dil. 1–11) ; time required, fifteen minutes ; spots present.

Case LXXXI.—F. M. ; reaction negative on fifth day ; time required, thirty minutes ; spots absent. Positive on twelfth day ; time required, ten minutes ; spots present.

Case LXXXII.—S. T. ; reaction negative on ninth day ; time required, thirty minutes ; spots absent. Positive on fourteenth day ; time required, eight minutes ; spots present.

Case LXXXIII.—A. S. ; reaction negative on twelfth day ; time required, thirty minutes ; spots present. Positive on sixteenth day ; time required, ten minutes ; spots present.

Case LXXXIV.—G. A. ; reaction negative on ninth day ; time required, thirty minutes ; spots absent. Positive on thirteenth day ; time required, ten minutes ; spots present.

Case LXXXV.—F. B. ; reaction negative on seventh day ; time required, thirty minutes ; spots absent. Positive on thirteenth day ; time required, eight minutes ; spots absent.

Case LXXXVI.—R. K. ; reaction negative on fourth day ; time required, thirty minutes ; spots absent. Positive on tenth day ; time required, ten minutes ; spots present.

Case LXXXVII.—J. McD. ; reaction negative on fourth day ; time required, thirty minutes ; spots absent. Positive on eighth day ; time required, fifteen minutes ; spots present.

Case LXXXVIII.—I. B. ; reaction positive on tenth day ; time required, seven minutes ; spots present.

Case LXXXIX.—Mrs. S. ; reaction negative on fourteenth day ; time required, thirty minutes ; spots absent.

Cases not Typhoid, Reaction Negative in Each.

Case I.—G. C. ; time allowed, thirty minutes ; day of disease, seventh ; spots absent.

Case II.—J. C. ; time allowed, forty minutes ; day of disease, tenth ; spots absent.

Case III.—W. A. ; time allowed, twenty-five minutes ; day of disease, sixteenth ; spots absent.

Case IV.—J. P. ; time allowed, thirty minutes ; day of disease, fifteenth ; spots absent.

Case V.—F. L. ; time allowed, thirty minutes ; day of disease, fifteenth ; spots absent.

Case VI.—J. D. ; time allowed, thirty minutes ; day of disease, twenty-first ; spots absent.

Case VII.—S. W. ; time allowed, thirty minutes ; day of disease, fifteenth ; spots absent.

Case VIII.—H. K. ; time allowed, thirty minutes ; day of disease, twelfth ; spots absent.

Case IX.—A. L. ; time allowed, thirty minutes ; day of disease, fifteenth ; spots absent.

Case X.—Mrs. W. ; time allowed, thirty minutes ; day of disease, twenty-fifth ; spots absent.

Case XI.—M. P. ; time allowed, thirty minutes ; day of disease, twenty-eighth ; spots absent.

Case XII.—S. M. ; time allowed, thirty minutes ; day of disease, fifteenth ; spots absent.

Case XIII.—M. E. ; time allowed, thirty minutes ; day of disease, twentieth ; spots absent.

Case XIV.—M. B. ; time allowed, thirty minutes ; day of disease, seventh ; spots absent.

Summary.

Eighty-nine cases of typhoid gave eighty-eight positive reactions,—98.9 per cent.

Fourteen cases, not typhoid, gave fourteen negative reactions,—100 per cent.

A CASE OF ANEURISM OF THE THORACIC AORTA RUPTURING INTO THE LEFT PLEURAL CAVITY.[1]

By James Quarles Chambers, A.B.,

and

Marco Antonio Barranco,

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Of the history of the patient whose case forms the basis of the following report nothing is known, except that he was supposed to have died of tuberculosis. His death had been sudden. The autopsy was made on October 24, 1898.

At the autopsy the following notes were recorded: The body is that of a fairly well-nourished male, about 40 years old. No scars nor markings are visible upon the external surface of the body. Some signs of bleeding are present at the mouth and nostrils.

Abdominal Cavity.—The transverse colon lies two inches below the umbilicus. The liver is in its normal position. The diaphragm on the right side extends to the fifth, on the left to the sixth interspace. Fluctuation can be obtained on the left side through the diaphragm. The transverse colon is closely adherent to the gall-bladder, which, in turn, is bound by adhesions to the under surface of the liver. The appendix is matted down by old adhesions. The celiac axis shows considerable atheroma in its branches, manifested especially in the hepatic and splenic arteries, which are quite hard and calcified. The spleen is thickened and hard, and shows considerable perisplenitis. The suprarenals appear normal. The kidneys are somewhat undersized; the capsule strips with difficulty; the cortex is contracted. The stomach is of about the usual size and lies in its natural position; its mucous membrane appears glazed and pitted. The duodenum and pancreas show nothing abnormal. The capsule of the left lobe of the liver is thickened, white, and glistening; on section the liver acini are well marked; the surface of the organ is diffusely yellow. At one spot in its periphery is a pale-yellow area two centimetres in diameter, which extends also an equal distance into the parenchyma. The bile-ducts are patulous.

Thorax.—The pericardium is normal and contains a normal

[1] Read at a clinical conference on autopsies, conducted by Dr. David Riesman, by whom the case had been assigned to the writers for study, and to whom they wish to express their gratitude.

amount of fluid. The heart is somewhat small. The myocardium is extremely flaccid and very soft. The heart contains a small amount of liquid blood. The right ventricle is decidedly dilated. The tricuspid orifice admits five fingers. The left ventricle is also dilated, the mitral opening admitting three fingers. There is some atheroma of the aortic valves. The mitral, tricuspid, and pulmonary valves appear free from disease. The left pleural cavity is completely filled with a soft red clot, which has compressed somewhat and almost entirely covers the lung. The right pleural cavity presents a few old adhesions, otherwise nothing abnormal. The lungs show some congestion at the bases, probably hypostatic, with emphysematous patches here and there. At the apex of the right lung are several discrete nodules, apparently fibroid tubercles. The bronchi on both sides contain a large amount of dark-brown fluid mixed with what appears to be undigested food. Upon section, a large aneurism of the transverse and descending portions of the arch of the aorta is found, measuring ten centimetres in diameter and containing a fairly hard laminated clot which possesses a lumen allowing the passage of the blood. The wall proper of the aneurism is worn away posteriorly so that the actual wall is constituted by the eroded portions of the third, fourth, and fifth dorsal vertebræ, to which the walls of the aneurism are closely adherent. The aneurism thus lies between the above-mentioned vertebræ and the upper internal aspect of the left lung. The left wall of the sac is intimately blended with the adjacent pleura. The lung itself is crowded outward and upward against the chest wall. So deep is the indentation upon the lung made by the encroaching tumor that it at first glance appears to be actual invasion of the lung parenchyma. A closer scrutiny reveals the condition of the contiguous lung as one of compression and condensation, and not invasion or absorption. The aneurism is saccular, irregularly sessile in shape, pushing outward, backward, and upward, with a large free communication with the arterial trunk. The contained clot nearly fills the aneurismal sinus, and so projects at its upper portion into the original lumen of the aorta that a deep channel has been worn through it by the blood-stream. At the inferior border of the area of fusion between the outer aneurismal wall and pleura is a jagged linear opening two inches in length, forming a communication between the sac and the left pleural cavity, through which the extensive effusion of blood has occurred. The aorta is somewhat atheromatous, but not extremely so.

Histological Report.—We have not, in the general tissues of the man, found any microscopic conditions peculiar to aneurism, the lesion which caused his death. We have, however, found a number of in-

teresting changes which we beg to report, and upon which we shall base a few remarks.

The *heart muscle*, as shown by a section taken from the wall of the left ventricle, presented the following conditions: (1) In places a distinct increase in the longitudinal space between contiguous fibres, and here and there a separation of fibres at their ends. Now and then a muscle-cell was marked by a transverse cleft through its substance. (2) The coats of the coronary branches were densely infiltrated with round cells, while a round-cell sprinkling was apparent throughout the muscle-substance. (3) Here and there at the poles of the nuclei were deposits of pigment, arranged as continuations of the nucleus in its long axis.

A section of the *wall of the aneurism* was taken just at the edge of the rent made by the rupture. It was composed of a mixture of involuntary muscle and fibrous tissue. Here, too, we found lines of mononuclear, darkly staining round cells, running parallel to the laminations of the wall, showing that this structure also had been invaded by one acute inflammatory process.

The *aneurism clot* showed well its fibrous, laminated structure.

The thoracic aorta, a few inches below the aneurism, showed an inflammation, a round-cell infiltration, especially of the outer portion of the middle coat. The media seemed to contain an excess of fibrous tissue, while elastic fibres were rather scarce.

The *liver* was examined by two sections; one taken indifferently, the second taken from the pale area in the periphery, alluded to in the autopsy notes, and presumed to be a localized area of fatty infiltration. The two sections showed practically the same. There were chronic changes, as shown by the thickened capsule, by a slight increase in the number of bile-ducts, and by an increase of the interlobular connective tissue. Acute changes were manifest from the cloudy swelling, the accumulation of round cells, particularly along the lines of the interlobular septa, and by, here and there, the congestion of an hepatic vein,—the picture of an early cirrhosis.

The section of the *gall-bladder* was most unsatisfactory. No traces of epithelium were left. We are unable to say whether this came from pathologic or post-mortem changes.

The kidneys presented considerable fibrous change at the apices of the pyramids ; in many areas in the latter there was no epithelium at all ; merely a net-work of fibrous tissue, in the interstices of which an occasional tube-cast was seen, some of them probably formed from the epithelium. Towards the cortex there was no interstitial change ; the parenchyma, however, showed cloudy swelling with fading of nuclei ; in many places fatty granulation with complete disappearance

of the nucleus ; a general round-cell infiltration most intense in the glomeruli.

The suprarenals, though appearing normal to the naked eye, were filled with pathologic changes. Beginning fatty degeneration with paling nuclei, which by most observers is now regarded as a normal process, was present throughout the cortex. The medulla and contiguous border of the *zona reticularis* were the seat of an acute inflammation; occasional nests of round-cells represented the initial stage of miliary abscesses. These groups of round-cells were of the mononuclear, intensely staining variety, densely packed, and presenting a bold, clearly cut outline against the background of the paler parenchyma. No giant-cells were discernible.

The lung in a random section showed considerably more anthracosis than is normal; in connection with this was much interalveolar fibrous tissue. There was some congestion, the blood filling in rare instances the alveoli ; the neighboring alveoli appeared dilated and emphysematous. At the apex of the right lung our attention was directed to the several small solidified nodules, about one-half centimetre in diameter. When excised and placed in alcohol they sank promptly, in contrast with ordinary blocks of lung tissue. Microscopic examination proved these bodies to be tuberculous areas. The miliary tubercles were typical, with their epithelioidal cells, their giant-cells, and an occasional "raked-field" area of caseation. Our efforts to find bacilli in these sections by the carbol-fuchsin methylene-blue process were not successful.

An enlarged lymph-gland from the lesser omentum showed nothing which we could regard pathologic. A second one, the size of a pigeon's egg, taken from the posterior mediastinum, at the root of the left lung, was filled with a great amount of coal-dust, which gave to the naked eye a granite effect, while the section-knife creaked through it as though it were so much earth.

Remarks.—The condition of separation and cleavage of the fibres of the heart-muscle has by certain observers been set forth under the name of *muscle segmentation* and *fragmentation* as a special form of myocardial degeneration. We have found this condition frequently in specimens of heart-muscle presumably normal. The inference is, therefore, that it must usually be either an agonic or post-mortem change.

Referring to the tuberculous nodules in the lung, we find in a great proportion of these tubercles the dust-pigment apparently an essential part of their composition. We are led, then, to question whether or not it was these nests of coal-dust which invited there the primary lodgement of the bacillus, or whether the apex of the lung

being the region of least expansion and hence of least aeration, was the only factor in the inoculation of this region. The question is a mooted one. In view of the almost constant association of the pigment with the tubercles in this case, it is strong circumstantial evidence that these deposits of pigment are a factor, at any rate, in tuberculosis among those of dust occupations.

On the other hand, there are one or more spots in our microscopic sections which clearly point to a different story. One of the degenerated "raked-field" areas has only at its periphery a dense fringe of this extraneous pigment, and other areas show a similar disposition. Now, had the degeneration of this central area taken place after the arrival of the pigment or because of its presence, certainly we should find the pigment scattered throughout the necrotic area. On the other hand, this central necrotic area being, as we know, destitute of blood-vessels, all foreign pigment wafted there by currents in the body liquids must of necessity halt and be deposited at this peripheral fringe. Therefore, in regard to this tubercle, at least, the associated pigment must have drifted there after the formation of the tubercle and could have had nothing to do with its beginning.

Further, these sections illustrate well one of Nature's many methods of combating infection ; finding herself unable to cope with this tubercular inoculation by her ordinary bactericidal and phagocytic measures, she has thrown around the intruders dense fibrous barriers which protected the man perfectly until he was carried off by an independent lesion. Certain it is that we find in the immediate neighborhood of the nodules an immense amount of fibrous tissue.

The anthracotic lymph-gland from the posterior mediastinum testifies well to the function of the lymph-glands as filters of extraneous matter, showing, too, that they hypertrophy as occasion demands.

Taking, as a whole, the tissues which we have examined we account for the sclerotic changes present in the kidney, the liver, and the aorta as due to an intoxication of long standing. Whether this came from syphilis, from alcohol, from mineral poisons, or what not, we cannot, in the absence of history, say. Certainly the condition was a chronic one. Assuming, as is suggested by our microscopic sections, that in the aorta the elastic tissue, which normally constitutes a very prominent and essential ingredient of its walls, has been replaced by fibrous tissue of a non-elastic nature, we can easily see how the intermittent gushes of blood into a tube rigid and unyielding must eventually establish or discover a point of weakened resistance. The weak spot bulges, but does not return to its normal calibre ; that power of restoration having been lost with the disappearance of its elastic tissue. Each beat of the heart renews the strain vented upon this particular

region ; the dilatation becomes greater and greater ; an aneurism results, the shape, size, and position of which are determined entirely by physical laws and conditions. Furthermore, if this view be plausible we must regard the aneurism as a compensation, a provision of Nature, a safety-valve for a rigid aorta, which, without the presence of this harbor for excess of pressure, would long ago have been rent asunder by the first unusual strain. The sclerosis, then, was the antecedent and the cause of the aneurism.

As for the phenomena of acute interstitial inflammation which are everywhere present, as evidenced by a general round-cell infiltration of the heart-muscle, the aorta, the kidneys, the suprarenals, and the liver, we can account for this only by an acute toxemia ; maybe an auto-intoxication from exposure to cold, the ordinary excrementitious matters of the skin being retained in the system.

The most interesting question in the study of this case has been prompted by two circumstances. First, by the report that the man had died of tuberculosis ; second, by the condition of compression and condensation found to obtain in the upper portion of the left lung. Considering that the man in the later stages of his affection, in all likelihood, had cough, persistent and intractable, that over this region of compression there probably was diminished expansion, increased tactile and vocal fremitus, impaired resonance on percussion, and bronchial or broncho-vesicular breathing on auscultation, that the severity of his lesions brought upon him asthenia and emaciation, it is not surprising that the condition should have been mistaken for one of tuberculosis in the upper portion of the left lung. Indeed, so frequently do these signs appear in connection with aneurisms of some magnitude that a writer has recently classified these phenomena of consolidation in the upper part of the left lung as corroborative evidence of the existence of an aneurism of the third portion of the aortic arch. The question of peculiar interest then is, What may be the pulmonary complications traceable to an aneurism of the intrathoracic aorta?

At the suggestion of Dr. Riesman, we have searched recent literature in quest of this subject. Most of the text-books are either silent or else mention the relation of pulmonary affections to aneurism incidentally. The only systematic consideration of the matter which we have found occurs in an article by A. Fränkel ("Beiträge zur Pathologie und Therapie der Aortenaneurysmen," *Deutsche medicinische Wochenschrift*, 1897, Nos. 6 and 7), of whose ideas we have made free use. Fränkel limits his discussion to four complicating affections,—fibroid pneumonia, lobar pneumonia, tuberculosis, and gangrene. In spite of the different natures of these several conditions they may be traced to a common origin,—*i.e.*, the compression of the lower respi-

ratory tract. We can most clearly and to the best advantage study this causative process in fibroid pneumonia, in which it is briefly as follows: In consequence of the compression which the bronchus suffers from the growing aneurism a circumscribed swelling of the mucous membrane arises above and below the point of pressure; this naturally contributes to greater constriction. By degrees this edematous mucosa shows signs of inflammation, becomes markedly altered, quite commonly reaching a condition of pressure necrosis. An accumulation of retained secretion in the tributary bronchioles ensues, partly by the downward flow of altered products, partly by the extension in continuity of the inflammation itself. The bacteria contained in this stagnant secretion engender inflammation in the tissues in whose embrace it is held. Round-cell infiltration of the peribronchial tissue and interalveolar septa follows, leading later to permanent connective-tissue formation. The terminal process of this subacutely spreading and indurating inflammation corresponds perfectly to that change known as "*carnification.*" Regarding lobar pneumonia, the pneumococcus, though normally an inhabitant of the mouths of healthy individuals, and possessing many opportunities for descent even to the finer bronchioles, nevertheless works no pathogenic influence upon the parenchyma of the lung unless preceded by processes of a peculiar nature, which favor its lodgement and growth in this region. Such a favoring process is the narrowing of a bronchus with secretions stagnant in its corresponding bronchioles. Similarly in respect to tuberculosis, this compression of the trachea or, what is more commonly the case, of one of the main bronchi, affords for the tubercle bacillus the golden opportunity for its lodgement. In support of this latter statement Fränkel cites three instances in which portions of the lung corresponding to the compressed bronchus were thoroughly invaded by tuberculous processes, while tuberculous manifestations in other parts of the lung were either absent or insignificant. The occurrence of gangrene, since it is seldom seen, needs no further elucidation than to call attention to its close etiologic connection with the ulcerative processes at the point of compression of trachea or bronchus.

In addition to the four conditions described by Fränkel there are other sequelæ worthy of consideration. In the initial stages of bronchial compression from a growing tumor the reactionary efforts of the lung to combat the partial obstruction may induce a lobar emphysema; or, after fibroid changes, mentioned above, and after the condition of compression, to which we shall refer, a vicarious dilatation of air-vesicles elsewhere may be induced. Furthermore, we know that cough is a classical symptom in aneurism, in case the recurrent laryngeal nerve is implicated; cough will also be present in any inflammatory

lesions of the pulmonary structures ; aneurismal cough is, as a rule, paroxysmal, brazen, unproductive ; the strain thrown upon the lungs in its production would be a predisposing factor towards emphysema. In fact, the lungs in the case before us presented many emphysematous patches. Pressure upon the bronchi causes bronchitis, which, in its more acute stages with granulations fresh and tender, may give rise to a sputum charged with blood (Osler, "Practice of Medicine," 1897, p. 711). Pulmonary hemorrhage profuse and fatal comes from rupture of the sac into the trachea or bronchus. *Pleurisy*, localized, is well shown in our specimen ; the upper part of the internal aspect of the left lung is plastered to the aneurismal wall by a fibrous pleurisy, the pleura coalescing with the adventitious sac of the aneurism and forming a considerable portion of its wall. Such pleurisy could cause fibroid pneumonia by inward extension (*cf.* "American Text-Book of Surgery," 1897, p. 246), and this in turn conceivably give rise to the production of bronchiectatic cavities. The occlusion of a pulmonary vein induces lobar congestion, stagnation with lowered vitality, upon which easily follows a pneumococcus infection, with the production of a lobar pneumonia, a not infrequent cause of death. Exactly the same process ensues in compression of the pulmonary artery, congestion following close upon the removal of the *vis a tergo* in the blood-stream. A number of such instances have been recorded (*cf.* W. T. Gairdner, "Meeting of Pathological and Clinical Society," *Glasgow Medical Journal*, August, 1897). An instance of recurrent hydrothorax following the perforation into the pulmonary artery of an aneurism of the ascending aorta is described by Lamplough (*cf. British Medical Journal*, August 14, 1897). Again, hemothorax may occur without the production of instantaneous death, as in a case under the observation of Dr. Riesman, a description of which is published in the "Proceedings of the Philadelphia Pathological Society," January 1, 1899, in which the patient remained alive three days with an increasing hemorrhagic effusion in his pleural cavity. Finally, in our own case, we refer again to the condition of pressure condensation occurring in the left lung.

To recapitulate, then, we have as possible pulmonary complications incident to aneurism,—(1) fibroid pneumonia ; (2) lobar pneumonia ; (3) tuberculosis ; (4) gangrene ; (5) emphysema ; (6) bronchitis ; (7) hemorrhage, either capillary or from the sac itself ; (8) pleurisy, localized ; (9) lobar congestion, with edema ; (10) hydrothorax ; (11) hemothorax ; (12) pressure condensation.

ALUMNI NOTES.

The William Pepper Memorial Meeting.

The William Pepper Memorial meeting was brilliantly carried out in University Chapel on Tuesday evening, November 29. The meeting was held by a joint Committee of Arrangements, representing the University of Pennsylvania, the American Philosophical Society, the Franklin Institute, the Academy of Natural Sciences, and other public institutions in which Dr. Pepper was a prominent and leading figure.

Governor Hastings, as President *ex-officio* of the Board of Trustees of the University of Pennsylvania, presided, and delivered an eloquent introductory address. At his right sat Mayor Charles F. Warwick, at his left the University's provost, C. C. Harrison.

Eight hundred invitations had been issued, and the general public was welcomed after eight o'clock. In spite of the unfavorable weather conditions the chapel was comfortably filled with a distinguished audience.

For more than three hours the distinguished associates of Dr. Pepper told of his greatness in the diverse activities, by means of which he served his day and generation far beyond the service of men who are commonly reckoned public citizens.

The speakers, each in brief but glowing addresses, told of the contribution of Dr. Pepper to the field of public service for which each responded. Besides Governor Hastings, who paid a high tribute to the memory of Dr. Pepper, the speakers were Dr. S. Weir Mitchell, who responded on behalf of the Board of Trustees of the University of Pennsylvania; Dr. James Tyson, who spoke on behalf of the medical faculty of the University; General Isaac J. Wistar, on behalf of the Wistar Institute; Mr. Daniel Baugh, on behalf of the Archeological and Paleontological Museums; Mr. Hampton L. Carson, on behalf of the General Alumni Society of the University; Mr. Frederick Fraley (whose address was read by Samuel Dickson), on behalf of the American Philosophical Society; Dr. William P. Wilson, on behalf of the Commercial Museum; Mr. John Thompson, on behalf of the Free Libraries of Philadelphia, and Mayor Charles F. Warwick, on behalf of the city of Philadelphia.—*Alumni Register.*

Proposed New Laboratories.

Active measures are being taken to raise sufficient money to build the projected pharmacological, physiological, and pathological laboratories. The estimated cost of the new buildings is $300,000, and of this amount Provost C. C. Harrison has offered to give $150,000, provided that the remaining $150,000 be raised. A committee composed of twelve medical alumni has been appointed by Provost Harrison, and it is hoped that, through the efforts of this committee, Pennsylvania medical alumni all over the United States will become interested in the movement, and the money be raised in this way.

The committee that has undertaken this work consists of Dr. F. A. Packard, Dr. Richard Norris, Dr. William C. Posey, Dr. Alfred Stengel, Dr. Judson Daland, Dr. J. Wilkes O'Neill, Dr. Charles H. Frazier, Dr. B. F. Stahl, Dr. Henry Beates, Dr. Thomas C. Potter, and Dr. Woodward.

The Annual Dinner of the Ex-Resident and Resident Physicians of the Philadelphia Hospital.

The Association of Ex-Resident and Resident Physicians of the Philadelphia Hospital held its twelfth annual dinner at the University Club on December 6, 1898. Twenty members attended. Letters were read from Dr. Alfred Stillé, the president, and from Dr. J. H. Jamar, and toasts were responded to by Drs. William Osler, Theodore Diller, J. William White, H. C. Wood, Alfred Stengel, C. S. Potts, Joseph F. Buxton, and Richard C. Norris.

President of the Wyoming State Medical Society.

At the second annual meeting of the Wyoming State Medical Society, held November 1, 1898, Dr. R. Harvey Reed, of the Class of '76, was re-elected president.

The Diploma of Dr. John Houston, Class of 1769.

A document of historical interest has been presented to the Houston Club, and is hung in the hall at the University of Pennsylvania. The explanatory inscription reads: "This diploma of Dr. John Houston, Class of 1769, Lancaster, Pa., great-grandfather of Henry Howard Houston, Jr., B.S., 1878 C., has been presented to the Trustees of the University of Pennsylvania by his great-grandson, Houston Mifflin, M.D., Class of 1879 M."

President of the Academy of Natural Sciences.

At a meeting of the Academy of Natural Sciences, held December 27, 1898, Dr. Samuel G. Dixon, of the Class of '86, was re-elected president.

Annual Meeting of the Athletic Association.

The annual meeting of the Athletic Association was held on Tuesday, December 13, 1898. The following directors were chosen:

From the Graduates: H. Laussat Geyelin, Harry C. Thayer, John C. Bell, George Stuart Patterson, Thomas Reath, George H. Frazier, Louis C. Madeira, Jr., J. Allison Scott, Murdock Kendrick, and Charles H. Schoff.

From the College: H. Kennedy Hill and S. Rowland Morgan.

From the Medical and Allied Schools: Frederick Fraley, Jr., and John K. Walker.

From the Law School: Charles L. McKeehan.

Resolutions on the death of Mr. John Neill, treasurer of the association, were adopted, and it was ordered that the University colors be displayed at half-mast on Franklin Field for a period of thirty days in memory of Mr. Neill. The report of the treasurer, extending from September 31, 1897, to August 31, 1898, was read. Compared with the one issued a year ago it shows a very favorable condition of affairs. In this fiscal year the deficit has been reduced from nearly $10,000 to about $3500, while the last report showed that the deficit had suffered an increase during the year of nearly $4000. This condition at the end of 1896–97 was due to improvements made on Franklin Field before that fiscal year, so that the increased deficit was not really a permanent loss. There was an actual gain on the business of that year of over $2000, with a gain of about $6500 for the fiscal year of 1897–98.

The First American Flag over a Philippine School-House.

The first American flag was raised over the Malate school-house, Philippine Islands, on December 22, 1898. The flag was sent by the University of Pennsylvania.

An Expedition to Africa.

Dr. Donaldson Smith, of the Class of '89, was at last accounts by mail preparing to leave London on a sporting trip to Somaliland, on the east coast of Africa. He has been commissioned by the Gaikwar of Baroda, whose acquaintance he made during his travels in India last year, to obtain a representative series of the big animals and birds of Africa for the Gaikwar collection. The expedition has thus a definite scientific object, and is not to be included in the category of those so-called sporting enterprises so numerous of recent years, which have no other aim than to secure a big bag, and which are slowly but surely exterminating many of the fine species of African antelope and like animals. Dr. Smith's experience and knowledge of the country will enable him to carry out his mission with great success, and an interesting collection should be the result of his present journey.

Dr. Smith, it will be recalled by those who have taken an interest in his adventurous career, was the first white man to pass through Africa from the Red Sea to Zanzibar. On his former journey he was accompanied by Mr. Dodson, of the Natural History Department of the British Museum, who is now in Central Africa with Mr. H. S. H. Cavendish. Dr. Smith published last year a record of his first African journey in a very readable book entitled "Through Unknown African Countries."

Appointment.

Dr. William G. Miller, Class of '97, has been appointed Coroner's physician for Norristown, Pa.

Necrology.

Robert Lowry Sibbett died near Fairfield, October 30, 1898. In 1856 he graduated from Pennsylvania College, at Gettysburg, and 1866 received his medical degree from the University of Pennsylvania. In 1873 the Pennsylvania State Medical Society appointed him chairman of a Committee on Medical Legislation, and to him is given much credit for the passage of a registration law. He was vice-president of the Section of Obstetrics in the Ninth International Medical Congress, held at Washington, D.C., in 1887.

Dr. Mark H. Lincoln died in Philadelphia November 26, 1898. He was born September 13, 1860, and graduated from the Medical Department of the University of Pennsylvania in 1885.

Dr. James Lawrence Tyson died in Penllyn, Montgomery County, Pennsylvania, December 12, 1898. Dr. Tyson was born in Philadelphia on November 19, 1813, and during his early life engaged as a druggist preparatory to the study of medicine. He graduated from the Medical Department of the University of Pennsylvania in 1838. In the same year he commenced the practice of his profession in Philadelphia, and afterwards removed to Baltimore, where he remained a few years, and then settled in Penllyn.

Dr. A. Graham Reed died in Philadelphia December 4, 1898, aged 61 years. He was born in Lowville, New York, and received his degree from the University of Pennsylvania in 1861. He served as a surgeon in the Union army, and since the war was a practitioner of medicine in Philadelphia.

Dr. John Sheets died in Philadelphia on December 25, 1898. He was born in Camden, New Jersey, in 1858. He graduated from the University of Pennsylvania in 1880, and subsequently studied in Vienna. He was widely known as a specialist on diseases of the nose and throat.

EDITORIAL.

THE RELATION OF TUBERCULOSIS TO LESIONS OF THE HEART.

Rokitansky's teaching that there exists between lesions of the heart and pulmonary tuberculosis a distinct antagonism can no longer be supported. It is now well established that cardio-vascular disease not only fails to give protection against tuberculosis, but, by producing favorable conditions, actually predisposes to it. In 500 cases of tuberculosis, compiled by Kidd, disease of the heart was found in twenty-seven. Of Frommhold's 277 cases of valvular disease twenty-two, or 8 per cent., had phthisis. Potain found pulmonary tuberculosis in nine of fifty-four cases of mitral stenosis. Chevers and others have shown that tuberculosis is the most common cause of death in subjects with stenosis of the pulmonary orifice.

When the two diseases are found to be co-existent, it does not follow that the endocarditis is necessarily primary, and the phthisis secondary. Recent research has shown that the former may supervene upon the latter. In these cases a careful bacteriological examination is obviously of great value in determining which affection is primary.

Teissier (Paris, 1894), who has carefully considered the effect of tuberculosis on diseases of the endocardium, concludes as follows: Endocardial lesions due to tuberculosis are multiple in form and complex in pathology, the tubercle bacilli, toxins, and associated bacteria all combining to produce the disease. The bacillus acts locally by producing a specific lesion, and generally by its deteriorating effect on nutrition. The toxin, on the other hand, is said to influence the vasomotor system and so to be especially active in the sclerotic forms. The specific lesion showing itself as granular or caseating nodules is rare, being less frequent than tuberculous pericarditis. It is always a secondary lesion due to the presence of bacilli in the circulation, and does not cause any characteristic cardiac signs. The sclerotic form is frequent, and the result of slow tuberculous infection. An acute type, due to secondary infection, is also described, which appears to tally by its clinical course with infective endocarditis, and, like the latter,

to take a vegetative or an ulcerative form. Benda (*Deutsche medicinische Wochenschrift*, No. 7, 1898) has recently recorded a remarkable example of acute tuberculous endocarditis in a boy, aged 10, who died of acute miliary tuberculosis following hip-disease. There was a warty endocarditis, and on the mitral valve, besides the fine, translucent granulations, there was a rough, yellow nodule the size of a hempseed. This was composed of a vascularized granulation-tissue with epitheliod cells, but with no giant-cells. The free surface showed irregular necrotic areas, partly caseous and partly hyaline, with enormous numbers of tubercle bacilli. A zone half a millimetre in thickness consisted wholly of colonies.

As the detection of tubercle bacilli in sections is not always an easy matter, it is not surprising that the examination of soft vegetations has given so many negative results. Recently Leyden found them in three consecutive cases of phthisis with endocarditis. Mouisset (*Lyon Médical*, May 27, 1894) demonstrated that the vegetations found in the heart of a subject who had died of phthisis were tuberculous by inoculating portions of them into a guinea-pig. Michaelis and Blum (*Deutsche medicinische Wochenschrift*, September, 1898) set up aortic incompetence in rabbits by piercing the valves with an instrument introduced through the carotid artery. Subsequently tubercle bacilli were injected into the veins of the ear. The animals died in from three to six weeks. Besides a diffuse tuberculosis, there was found enlargement of the heart. The valves which had been damaged were covered with soft vegetations, in which tubercle bacilli were found sometimes in large, sometimes in smaller numbers.

Tuberculosis is more common in the pericardium than in the endocardium or myocardium. In the *American Journal of the Medical Sciences* for January, 1893, Osler reported seventeen cases of tuberculous pericarditis which had come under his observation. He recognizes four groups of cases: First, those in which the condition is entirely latent, and the disease is discovered accidentally in individuals who have died of other affections or of pulmonary tuberculosis; a second group in which the symptoms are those of cardiac insufficiency following the dilatation and hypertrophy consequent upon a chronic adhesive pericarditis; a third group, in which the clinical picture is that of an acute general tuberculosis which has had its origin from the tuberculous pericardium or tuberculous mediastinal lymph-glands; and a fourth group, with symptoms of acute pericarditis with more or less exudation of sero-fibrinous, hemorrhagic, or purulent character. In the last group there may be no suspicion whatever of the tuberculous nature of the affection, and doubtless many of these cases have been regarded as idiopathic from exposure to cold and wet. But, as in the

case of pleurisy, it seems highly probable that many cases of so-called primary pericarditis are the result of tuberculosis. It is true that tubercle bacilli are rarely discovered in the exudation, but it is now well recognized that pleurisy with an apparently sterile effusion is usually tuberculous. Eichhorst proved this to be true by inoculating guinea-pigs with large quantities (fifteen cubic centimetres) of the serous exudate. In this way fifteen of twenty-three cases of acute pleurisy were shown to be tuberculous. In an earlier series of experiments the results were not so conclusive, as the quantity of exudate (one cubic centimetre) injected was too small. In a similar manner the same investigator has shown that pericarditis is also frequently tuberculous, positive results having been obtained in eight of twenty-seven cases. He points out that as the tubercle bacilli are often very scanty, the ordinary culture and inoculation experiments are unreliable.

Townsend, in 1832, was the first to record an example of tuberculous infection of the myocardium. In 1898 Hand collected forty-two cases. In the majority of instances a focus of tuberculous disease is found elsewhere, especially in the mediastinal glands, although very rarely the affection seems to be primary in the heart. Most of the cases have occurred before the fifteenth year. Infection may take place through the veins, or by the spreading of a tuberculous pericarditis, but undoubtedly the most common avenue of invasion is through the lymphatics.

Anatomically, the disease may be manifested in one of three ways: First and most frequently, as a circumscribed cheesy nodule, varying in size from a pea to a hen's egg; second, as semitransparent miliary tubercles disseminated through the cardiac muscle; and, third, as a true tuberculous myocarditis, consisting of a diffuse sclerosis with giant-cells and small round-cells distributed between the muscle-fibres and the bands of connective tissue. The ventricles are more frequently affected than the auricles. The disease may be confined to the myocardium, but not infrequently the pericardium and more rarely the endocardium share in the tuberculous process.

THE TREATMENT OF PNEUMONIA IN CHILDREN.

At a recent meeting of the New York Academy of Medicine the subject under discussion was the treatment of pneumonia in children. Interesting papers, which are published in full in the *Medical News* for November 19, 1898, were presented by Henry Dwight Chapin, L. Emmett Holt, Henry Koplik, Walter Lester Carr, and Simon Baruch.

Dr. Chapin, who opened the discussion, spoke of the management of the fever in pneumonia. It seemed to him that undue prominence was often given to this symptom, and energetic measures sometimes needlessly taken to combat it. Children, as a rule, stood high temperature well, and in such a case it was folly to upset the stomach by drugs or weaken the heart by antipyretics. When, however, the fever had a disastrous effect upon the brain and nervous system, upon the heart and lungs, and upon the digestive organs interference was promptly called for, and the indication was not so much the exact degree of temperature as the disturbance which was caused by the fever. In croupous pneumonia the indications for interference in hyperpyrexia were not so important as in bronchopneumonia, as the former disease ran a short course and tended to recovery in children, even with severe nervous symptoms and very high fever.

In the management of hyperpyrexia all depressing remedies, such as the coal-tar derivatives, should be avoided. The only exception made to this rule was the occasional administration of small doses of phenacetin in sthenic cases, when there was pain and nervous restlessness. Cardiac stimulants, such as caffeine or camphor, were always added. The application of water was on the whole the safest and most satisfactory method of controlling dangerous hyperpyrexia. Much could be accomplished by a thorough application of cold to the head. In order to be effectual the cold to the head must be thoroughly and continuously applied. He has found ice-poultices, made by mixing finely cracked ice with flaxseed meal in oiled silk, placed around and on top of the head, to be most valuable.

The next resource was the application of compresses directly to the chest. The child was stripped, wrapped in a blanket, and placed upon a table. A stimulant was given and the feet were placed in contact with hot bottles. A compress sufficiently large to surround the chest was plunged into water at a temperature of from 70° to 95° F., and applied to the chest. This was changed every ten or fifteen minutes until the desired result was obtained. The addition of about one-fourth part of alcohol sometimes increased the value of the compresses. So long as the feet and hands were kept warm the compresses might be applied, but chilliness of these parts was a contraindication to cold. When the temperature was reduced to 102° or 103°, the compresses should not be renewed. As a rule, children did not object to this compress when applied in the manner suggested, the principal point was to avoid too great a degree of cold, and to apply the compress with as little disturbance as possible, keeping the extremities warm. He rarely employed the tub in combating hyperpyrexia.

Dr. Holt called attention to the fact that primary pneumonia in

fairly vigorous children, more than two years old, usually ended in recovery. There were three ways in which pneumonia in young children might kill: (1) From exhaustion; (2) from complications; (3) from acute toxemia. He thought that the relative frequency of these causes of death was about 60 per cent. from the first, 25 per cent. from the second, and 15 per cent. from the third.

In the first class the most important things to be considered were an abundance of fresh air, intelligent nursing, and careful feeding. Rooms kept close and suffocating, at a temperature of 75° F. and upward, on account of the fear of draughts were to be reckoned among the most depressing agencies that could be imagined. In the Babies Hospital he endeavored to have them taken from the ward two or three times a day to another room where a complete change of air could be secured, and to allow thorough ventilation of the ward they had vacated, the temperature of both wards being kept at about 70°.

Plenty of water was always important and was best given by combining it with the food, together with the use of predigested milk and beef preparations, which were easier assimilated and taxed digestion as little as possible.

Few things taxed the child so much as acute indigestion, which was usually the result of overfeeding. The cough was best controlled by inhalation of creosote, eucalyptol or pine-needle oil under a tent than by the use of drugs by the mouth. Some stimulation was usually required, and sometimes wine, sometimes brandy or whiskey was better borne. Both should be freely diluted, and rarely pushed beyond one ounce of whiskey or three or four ounces of light wine in twenty-four hours. Moderate counterirritation was usually maintained by the use of mustard paste every three to six hours, left on five to six minutes: and an oil-silk jacket was worn throughout the attack.

Complications were generally the result of the infection of other organs by the pneumococcus, and the order of frequency was plastic or purulent pleurisy, pericarditis, meningitis, and peritonitis. Except pleurisy, these complications were almost invariably fatal.

In cases characterized by marked toxemia cardiac and respiratory stimulants were often necessary within twelve hours of the onset. The most reliable stimulants were strychnine, nitroglycerin, oxygen, alcohol, and caffeine. Of strychnine he rarely for a child of one year gave more than $\frac{1}{200}$ of a grain every three hours, except for a short time. Nitroglycerin was especially useful in the early stages with a pale face, feeble pulse, cool extremities, and signs in the chest of intense pulmonary engorgement. For a short time $\frac{1}{400}$ of a grain might be given every hour, and after two or three doses continued at four- or five-hour intervals. Alcohol, though useful, was apt to be pushed too far; it

was seldom necessary to give more than twenty drops of brandy hourly, or an ounce in a day. Oxygen was of the greatest value. Caffeine in $\frac{1}{10}$-grain doses sometimes acted better than strychnine, particularly in dull, drowsy patients. On account of the difficulty of administration and the feeble digestion it was found advantageous in many cases to employ forced feeding by means of the stomach-tube, completely peptonized milk being the food most generally useful. Hyperpyrexia was best controlled by the cold pack. Hot mustard-baths might be given every five or six hours. The temperature should be from 105° to 106° F., this being tested by a thermometer, lest the child be scalded. They might be continued from ten to twenty minutes.

Dr. Koplik spoke of the value of digitalis or strophanthus as a heart stimulant. One-half minim of the tincture of digitalis might be given and frequently repeated until the desired effect was obtained. He thought it best not to use nitroglycerin in threatened or actual edema of the lung. In tender infants his experience at the bedside had been discouraging. Camphor, caffeine, ammonia, and musk were also not sustained in action. Strychnine in doses of $\frac{1}{400}$ of a grain hypodermically was a very useful drug. In acute heart-failure the main reliance was on hypodermics of alcohol, then of ether. Tepid or warm baths seemed to have a stimulating effect. Poultices or cataplasm did no good and could not be justified on scientific grounds. For high temperature sponging with cold water was useful. A cardinal guide was never to repeat a bath, warm or cold, unless it was found that with the reduction of temperature the heart-action remained good. The patient should be isolated from other children. Ventilation was an absolute necessity. The temperature of the room should be kept at about 65° or 70° F. The impregnation of the air about the patient with turpentine, creosote, or thymol vapor was of very questionable utility.

Dr. Carr discussed the treatment of bronchopneumonia complicating measles. He dwelt upon the importance of diet, ventilation, and baths. As regards the use of drugs, he thought calomel had a decided effect in many cases when the digestion was interfered with and the liver was engorged. Codeine in $\frac{1}{16}$- to $\frac{1}{4}$-grain doses lessened restlessness and troublesome cough early in the disease. Nitroglycerin was indicated when the heart's action was weak, with pale skin and poorly filled arteries. Strychnine in doses of $\frac{1}{600}$ to $\frac{1}{60}$ of a grain was a valuable agent, and should be administered hypodermically if the emergency demanded it.

Creosote was very useful in the pneumonia of children whose history was tuberculous or when there was free purulent secretion. Creo-

sote in ½- to 1-minim doses was a good cough-mixture if used with a thick malt extract. Cod-liver oil had an important place in the treatment of pneumonia, and he did not hesitate to administer it in every case in which the digestion was not impaired or the temperature too high.

Dr. Baruch spoke of hydrotherapy in pneumonia of children. In children under three years the tub-bath with continuous friction was most useful. The temperature of the water ranged from 95° to 80° F., very rarely lower. The duration should be prolonged to eight minutes, and repeated every four hours. In the intervals between the baths a compress, consisting of three folds of old linen or towel, wrung more or less out of water at 70°, and secured by a flannel bandage placed around the body, might be applied with advantage every hour when the patient was not asleep. In most children over three years of age full baths were too disturbing. Spontaneous reaction should always be provided for by friction *during* the bath so that there should be no need for warmth and friction *after* the bath. Reaction was always furthered by rubbing during the procedure, or by protection against evaporation. It might be enhanced, also, by modifying the temperature of the water, not, as was often erroneously done, by elevating it, but by lowering it within reasonable limits and shortening the procedure. It was a law of hydrotherapeutics that low-water temperature, strong mechanical impact, and brief duration promoted reaction. Higher bath temperatures were more agreeable and, if the procedure was prolonged, afforded greater temperature reduction, but did not produce the stimulating, antifebrile effect of a correctly adapted cold procedure. Hippocrates taught: "Cold water stimulates, warm water depresses," and yet these important truths still remained to be taught to-day.

The Essentials of a Good Baby Food.

Cotton suggests the following as the test of a satisfactory artificial food for infants: (1) Does the food contain all the constituents in about the same proportions as they are found in mother's milk? (2) Can this food be administered in a form suitable to the physiological requirements of the infant's digestion? (3) Can it be given in quantities adapted to the capacity of the infant's stomach? (4) Does it possess the antiscorbutic property, or has that been destroyed by cooking? (5) Is this food wholly or partly of animal origin? (6) Is it free from pathogenic micro-organisms?—*Pædiatrics.*

MEDICAL PROGRESS.

MEDICINE.

UNDER THE CHARGE OF

JAMES TYSON, M.D.,

ASSISTED BY

M. HOWARD FUSSELL, M.D., AND A. O. J. KELLY, M.D.

The Homburg Treatment of Chronic Constipation.

Leber (*International Medical Magazine*, November, 1898) says that cases of constipation treated at Homburg as a rule have existed for months or years before coming to the place, and have been treated variously. According to his experience, a patient who has used internal medication for years is more easily restored to health than one who has used daily or frequent enemas.

In the treatment of constipation he considers the removal of the patients from home and business activity, with the possibility of devoting themselves exclusively to the restoration of their health, is an especially important factor.

The customs and rules followed at Homburg, of course with modifications, are as follows: Immediately upon rising the patient drinks one or even two glasses of water from one of the local salt springs; fifteen to twenty minutes is allowed to elapse between the two glasses.

The action of the water shows itself rather promptly, before or immediately after the first breakfast. This begins half an hour or an hour after the last glass, and terminates after one, two, or three movements for the entire day. If the strength of the patient permits, abdominal massage is given as soon after the last glass as possible,—that is, before the first breakfast. He considers the treatment of massage indispensable where the constipation is due to atrophy or atony of the intestinal muscles. He thinks abdominal massage should be given by the physician alone.

The effect expected from abdominal massage is to put the intestines in a position to perform their functions properly, and we obtain this result by strengthening the intestinal muscles, stimulating peristalsis, increasing the blood-supply, reducing the chronic inflammatory condition of the intestinal mucous membrane, and removing the adherent tough coating of mucus, and all manipulations of abdominal massage must have this sole purpose; other aims are useless.

For the performance of abdominal massage the patient lies, with the upper portion of the body slightly elevated, on a narrow, firmly upholstered bench, with a roller of about fifteen to twenty centimetres in diameter under the knees, the arms lying slightly at the side of the trunk, the mouth open.

The patient must be entirely comfortable and in no forced position, and should breathe quietly and regularly. The masseur stands at the left side of

the patient. The anointing of the surface is not only unnecessary but entirely unsuitable, since, in certain manipulations, such as frictions and shakings (erschutterung), the points of the finger slip on the greased skin over the parts of the body to be treated without efficiently exercising them. Besides, by dry massage one can also treat the most hairy abdomen without producing discomfort, which would not be lacking if the abdomen had been anointed, since the pulling on the greased hairs easily causes an inflammation of the hair-follicles. At the beginning of the massage the operator encircles the right side of the patient alternately with both hands, and strokes the right hypochondrium from as far backward as possible forward and to the left to beyond the middle line, with a gentle but gradually increasing pressure. These strokings reach upward to the upper border of the liver. Each succeeding one is carried two or three centimetres lower down, while the lower border of the ribs and even the liver are compressed as firmly as possible. In the region of the pelvis the strokings are carried out, always as far as possible, from behind forward, across the middle line below the umbilicus. Altogether about twenty or thirty strokings are given.

Now the two hands are laid alongside one another in such a manner that the tips of the two middle fingers touch and the index-fingers are crossed on the under surface of the hand. The tips of both middle and ring-fingers should form a straight line. In this position of the hands the finger-tips are pressed into the ileo-cecal region, and rapid and short frictions made vertically to the direction of the colon, over that part of the same that is under the finger-tips, combining them, after a little experience, with a slight push inward. The finger-tips remain on the part of the abdominal wall where they happen to be, and with them rub the underlying portion of the colon. After this has been done for about one-quarter to one-half minute, the fingers are raised completely and pressed down again slowly immediately alongside, and the entire colon ascendens and transversus to the middle line is treated in this fashion, always vertically to the direction of its length. The entire proceeding is repeated two or three times. Before passing on to the actual kneading of the stomach, the strokings are repeated as above, say ten or twenty times. The kneading is done by the hands alternately alongside and above one another.

In the first place, the hands are so laid alongside each other that the radial sides touch. The left thumb lies on the back of the right hand, the right thumb in the volar surface of the left hand, or the reverse. One begins, as in the strokings, in the right hypochondrium, in this manner; the part to be kneaded is pressed towards one by the finger-tips and away again by the heel of the hand, the finger-tips constantly advancing towards the middle line, while the kneading is beyond this to the left hypochondrium. In kneading with superimposed hands the ulnar edge of the hand is—advancing as before—pressed in, then the tips of the fingers, the radial edge, and finally the heel of the hand. In the middle line, and especially in the region of the pylorus, the pressure in kneading must be reduced somewhat, as every one is more or less sensitive to pressure at this point. A further method is to make small, rapid, circular rubbings of the colon, beginning at the cecum and also continued to the middle line. They are done with the separated (second, third, and fourth) fingers of the right hand, while the opposite side is pressed towards the operating hand with the other. The circular frictions must be done very rapidly with slight concussions. In conclusion, the hands are laid alongside one another,

pressed into the colon directly over the symphysis, and rapidly interrupted trembling or jarring motion is made over every attainable portion of the colon descendus and transversus.

Some strokings, as at the beginning, terminate the massage of this side. The masseur then steps to the right side of the patient and treats the left side of the abdomen in the same manner. The stomach, in so far as it is not covered by the ribs, is now masseured in the same manner as the colon. The conclusion of every abdominal massage treatment consists of the following two procedures: One hand is flatly placed on each half of the abdomen, and the two hands press the contents of the abdomen alternately towards one another. In a large and lax abdomen this is equivalent to literally tossing it to and fro. Finally, one encircles the entire abdomen so that the hands of the masseur almost touch in the lumbar region of the patient, and shakes him up and down several times, repeating this procedure perhaps thrice. The entire massage of the abdomen should last fifteen to twenty minutes.

Infection from the Hands in Pulmonary Phthisis.

Baldwin (*Philadelphia Medical Journal*, December 3, 1898). The writer has examined the hands of a number of patients suffering from phthisis, with the idea not so much of determining the degree of danger from infection by the hands as to discover the difference in respect to the presence of bacilli between otherwise cleanly persons using handkerchiefs and those depositing their sputum on cloths or in cuspidors.

He examined the washings from the hands of ten private patients and eighteen sanitarium patients, all of whom were known to have expectoration containing bacilli. All but five of the patients were ambulant, about half of the private patients used cuspidors, and occasionally handkerchiefs; the rest used either cuspidors only or cloths. The sanitarium patients uniformly denied using handkerchiefs. The patients had washed their hands previous to the test-washing, at a period varying from ten minutes to twelve hours.

Guinea-pigs were inoculated with the washings from the hands as a test as to whether such washings contained bacilli or not. This process was carried out in all of the private patients and five of the sanitarium patients, and in the rest microscopic examination alone was made. He concludes, first, that living tubercular bacilli are not infrequently present on the hands of patients who are not careful in the use of handkerchiefs, cloths, and even cuspidors when the expectoration is abundant. Second, no precaution against contamination of the hands can avail better than the use of cuspidors, combined with the frequent ablutions of soap and water. Third, with the present usage of society, people are not likely to use pocket-cuspidors except in institutions, consequently handkerchiefs will be used in public, especially as antispitting laws are forcing individuals to use them. There is, therefore, urgent necessity for a cheap, comparatively impervious, and soft handkerchief that can be burned.

Radioscopy of the Lungs.

Abrams (*Philadelphia Medical Journal*, November 26, 1898) says that it is in connection with pulmonary tuberculosis that the Röntgen rays have achieved their greatest diagnostic triumph. With their aid it is possible to detect pulmonary tuberculosis when no other physical sign of the disease is present.

Only an intimate acquaintance with the normal appearance of the lungs will justify the observer in formulating conclusions from his fluoroscopic examination.

The author has discovered and reported in other papers that there are present over the thorax of apparently normal individuals constant areas of diminished percussion resonance, varying from dulness to flatness. He calls these areas atelectatic zones. He discovered, by experimenting with a fluoroscope, that atelectatic zones may be demonstrated in a large number of individuals by the use of this instrument, and that these zones throw a circumscribed shadow on the fluoroscope, which will vary according to the degree and area of the pulmonary atelectasis.

Before deciding whether the shadow cast on the fluoroscope is really due to pulmonary consolidation, the subject should be instructed to make forced inspirations. If the shadow disappears and is supplanted by a bright reflex, it is due to atelectasis; if the shadow persists, pulmonary consolidation may be safely concluded to exist, excluding, of course, other anatomic conditions that would interfere with the transmission of the Röntgen rays to the fluoroscope. Before and during the radioscopic examination of the lungs it is always imperative to instruct the patient to practise forced breathing.

Diagnosis of Nephritis without Albuminuria.

Edwards (*American Journal of the Medical Sciences*, October, 1898) says that both acute and chronic nephritis are diagnosticated with ease when the urine is examined systematically and repeatedly from twenty-four hour specimens, and when the specific gravity, the albumin, and the microscopic contents are considered.

He goes on to say that he is sure that both chronic and acute nephritis are overlooked when albuminuria alone is considered, and is certain the symptom of nephritis without albuminuria certainly exists.

Casts may be found at intervals when albumin is temporarily absent or when albumin is permanently absent, casts should be searched for even when albumin is absent.

He says that heart and arterial changes are by no means invariable, even in contracted kidney. He concludes,—

(1) Carefully repeated routine chemical and microscopical examination of the urine every twenty-four hours usually, but not invariably, detects acute and chronic nephritis.

(2) The diagnosis of the albuminuric and non-albuminuric types of the nephritides is aided by searching examination of other viscera and parts,—*e.g.*, by disclosure of cardio-vascular changes, retinal involvement, etc.

(3) These visceral or somatic changes, usually present in nephritis, may be lacking in concrete instances or be capable of other or diverse interpretation, as polyuria, atheroma, etc.

(4) The urinary findings, most essential to the diagnosis of nephritis, may be lacking, as many other signs and symptoms of minor dignity. Hence, as we fear instinctively, as it were, the existence of nephritis in certain cases before we examine the urine, so we may still fear its existence after negative urinalysis.

(5) Nephritis may be unattended by albuminuria. Such nephritis is usually interstitial in type, of which cases abound in literature.

(6) While certain instances of non-albuminuric nephritis correspond to the type described by Dr. D. D. Stewart, yet non-albuminuric nephritis may not exactly correspond to said type, since acute nephritis, chronic parenchymatous nephritis, and chronic interstitial nephritis may exceptionally occur without albuminuria.

(7) Casts should always be searched for; they are more constantly found than is albumin, yet they seem in certain instances to betoken renal degeneration rather than inflammation. They are not invariable in nephritis nor are they invariably nephritic.

(8) Future clinical caution and pathological examinations will probably increase the number of cases of non-albuminuric renal inflammations of acute, subacute, and chronic types.

(9) Non-albuminuric nephritis is of special importance (*e.g.*, Stewart's type) in life-insurance and kindred examinations and in practice, since prophylactic measures may be instituted and the prognosis obviously influenced.

Farinacea in the Diet of Early Childhood.

Dr. D. J. Milton Miller read a thoughtful paper before the Philadelphia Pediatric Society, February 8, 1898, which he concludes in the following way: "The diet best suited during the whole of the second year of life should, in the majority of instances, be largely nitrogenous, with a minimum of carbohydrates, the staple being milk, or milk mixed with farinaceous gruels and jellies, with beef-juice and broths, and, after the eighteenth month, rare or raw-scraped beef or mutton, and occasionally eggs. The fruit-juices, such as orange juice and baked apple should form part of the dietary from the fifteenth on, and even earlier, if sterilized milk is used.

Of course, many children can digest farinacea with benefit during the whole of the second year; but the child's nutrition would seem best subservient by permitting them in minimum amounts only.

Hemorrhagic Pericarditis due to the Pneumococcus; Aspiration; Recovery.

Sears (*Boston Medical and Surgical Journal*) reports a case of acute pericarditis accompanying croupous pneumonia, in which the fluid drawn from the pericardium was bloody, and found to contain a pure growth of pneumococci. After the withdrawal of ten ounces of fluid the patient slowly improved, and was finally discharged cured. The writer has been able to find in literature eleven cases of recovery from pericarditis, in which the exudate was more or less bloody. These eleven cases are not, to be sure, a very large number, and yet they amount to a very considerable proportion of the cases of paracentesis pericardii reported, since they do not greatly exceed a hundred all told. Of these eleven, six occurred during the course of scurvy, five being reported previous to 1854, three were rheumatic, and one was with exophthalmic goitre. One was apparently idiopathic, occurring in a very alcoholic subject. The case reported is the only one which the writer has been able to find where a bacteriological examination was made, nearly all the others occurring in prebacteriological days, but the close similarity of the pericardium and pleura make it very probable that further examinations will give positive

proof that other bacteria than the tubercle bacillus are capable of producing hemorrhagic pericarditis, as well as hemorrhagic pleurisy. At all events, these cases raise the question whether Osler's statement that the presence of a bloody exudate on aspiration is decidedly in favor of tuberculosis may not require a little shading.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

ASSISTED BY

CHARLES H. FRAZIER, M.D., AND GEORGE M. PURVES, M.D.

A Further Account of the Treatment of Aneurism by the Conjoint Use of Galvanism through Introduced Coiled Wire.

D. D. Stewart (*Philadelphia Medical Journal*, November 12, 1898) says this method of treatment consists in introducing into the sac, under the strictest antiseptic precautions, a fine coiled wire, previously drawn, so that it may readily pass through a thoroughly insulated needle of somewhat larger calibre than that of the wire, and also may assume snarled spiral coils. So that with a moderate amount of wire the entire calibre of the sac will be occupied. Silver, gold, and platinum are undoubtedly the most desirable metals. The amount of wire depends upon the size of the sac, and must be decided upon with a nicety of judgment, as with too small an amount little or no result will be obtained, and with too great a quantity permanent cure through obliteration of the sac by contraction of the clot cannot be expected. The anode or positive pole should invariably be the active electrode. This is connected with the wire, and the negative rheophore, a large clay plate, or an absorbing cotton pad of equal dimensions, is placed upon the abdomen or the back. The current is slowly brought into the circuit, and its strength noted by a milliampèremeter, the increase is gradual for a few moments until the maximum strength supposed to be required is reached and is maintained at this point until the approach of the end of the session, when it is gradually diminished to zero. The released external portion of the wire is gently pulled upon and cut close to the skin. Experience has shown that the current strength must be rather high—from 40 to 80 degrees—and the duration long,—from three-quarters of an hour to one and a half hours. The solidification from this process is rapid and is generally manifest before the end of the electrical session, through changes apparent to the eye and the hand, in the pulsation and in the degree of consistence of the sac wall. These changes become more marked in the course of a few days, until, after a time, in the most favorable cases, a hard nodule, with a communicated pulsation, only replaces the previous expansible tumor. This is the history of four of the ten cases now recorded. One effect possessed by this method in producing blood-clot should not be lost sight of; through portions of the coils coming in contact with the sac wall, an electrolytic effect is, under the current's influence, produced

on the endothelial lining of the sac. This Macewen has demonstrated is highly favorable to the subsequent deposition of leucocytes derived from the vessel wall, and further, to segregation from the blood stream the combined efforts resulting in the formation of organizable white thrombi, from which vascularized fibrous tissue readily springs. From these thrombi organization may rapidly extend to the red thrombi, formed directly around the centrally disposed wire, and thus solidification and organization of the sac promptly occurs.

Observations on Morton's Painful Affection of the Fourth Metatarso-Phalangeal Articulation and Similar Affections of the Metatarsal Region that may be included under the Term Anterior Metatarsalgia.

Royal Whitman (*New York Medical Record*, August 6, 1898). The following conclusions are presented: That Morton's painful affection of the foot and the less definite symptoms that may be included under the term metatarsalgia, although not identical, are nearly allied, in that an abnormal relation of the metatarso-phalangeal joints to one another, combined with pressure, is the cause of the symptoms. This abnormal relation is caused by an occasional or habitual depression of the anterior metatarsal arch or of one of the bones of which it is composed. Habitual depression of the arch is often combined with general weakness of the foot, and much of the discomfort is due to abnormal pressure on the depressed bone from beneath. Occasional and typical Morton's cramp may exist without obvious deformity, and in such instances it is caused by the lateral metatarsal bone, due probably to abnormal laxity of the ligaments. The most constant of the general causes predisposing to weakness of the front of the foot, as well as the most direct cause of the symptoms of discomfort in this region, is the imperfect shoe. The cure of the condition may be obtained by supporting the anterior arch, by avoiding the exciting causes of pain, by correcting, it may be, abnormalities of function or structure, by strengthening the weakened foot by exercises, and by affording it the opportunity for functional activity by the use of a proper shoe. As regards the actual symptoms of anterior metatarsalgia there is but little difference in the accounts of writers on the subject, the original description of Dr. T. G. Morton including all the important points. The two important theories in regard to the causation of the pain are—

(1) That if the foot be otherwise normal, as is implied by Morton, the pain depends upon the anatomical construction of the foot, and one must content himself to remove the head of a normal bone, because it serves as a point of counterpressure in pinching a nerve.

(2) That the pain is the result of an acquired weakness either of function or structure. The types of weakened or depressed metatarsal arch are as follows:

(*a*) A rigid depression of the anterior arch somewhat similar to flat-foot, in which the front of the sole forms a rounded prominence, in which the toes are dorsiflexed, and in which the arch cannot be reformed by manipulation. The pain is referred to the front of the foot, is more or less constant on use, and is caused by direct pressure on the sensitive and depressed joints and by lateral pressure of the joints.

(*b*) Simple non-rigid depression of the anterior arch. In this type the

foot is broadened and may or may not be associated with flat-foot. Here the discomfort is due to the increased pressure upon the heads of the metatarsal bones and to painful callus. If lateral pressure be made on such a foot neuralgic pain referred to the fourth metatarsal joint may be extended.

(*c*) Cases of typical Morton's neuralgia, in which, in many instances, the foot may appear to be perfectly normal or else a weakness of the longitudinal arch, or of the anterior arch is present. If the theory that the pain is due to pressure is true, it is evident why such measures as wide, thick-soled shoes splintering the foot and preventing lateral pressure would give relief; why bandages and strappings about the metatarsus, and the support afforded by a flat-foot plate would give relief. The supporting of the longitudinal arch, either by shoe or brace to hold the foot in place and to remove a part of the weight from the metatarsal region, is of great importance. The author has never performed resection, as this is the treatment of the effect rather than of the cause, and has the theoretical disadvantage of weakening the foot and causing an unpleasant deformity.

Some Rudiments of Intestinal Surgery.

Frederick Treves (*British Medical Journal,* November 5, 1898) remarks that in a fatal case of acute intestinal obstruction the undoubted occlusion is by no means either the most serious or essential element, but that the fatal issue depends upon the rapid absorption of the products of decomposition from the patient's bowel. Those dying unrelieved from such a condition really succumb to poisoning,—to an intestinal septicemia. In an acute case death may take place within seven days, during which time three stages may be recognized:

(1) In the first stage the symptoms are those of intense abdominal pain, collapse, and vomiting; these being due in nowise to the fact that the bowel is occluded, but to the sudden and painful impression that has been made upon the abdominal nerves. Hence they are fully nervous in character, as they may equally well mark the passage of a gall-stone, the torsion of an abdominal tumor, or the perforation of an ulcer of the stomach.

(2) In this stage the symptoms attain more individuality and depend without doubt upon the mechanical obstacle of the bowel. The pain is now due to a large extent to the disordered and futile peristaltic movements, while the absolute constipation and the persistent vomiting depend upon the blocking of the bowel. The stercoraceous vomit bespeaks a rapid decomposition taking place in the intestinal contents, such change being dependent partly upon the retention and probably to a larger degree upon the vascular and other changes in the intestinal walls. Finally, there is an increasing abdominal distention; the meteorism depending in large part upon the vascular changes in the bowel walls.

(3) In the final stages the symptoms are those of poisoning; the septic matter being derived from the patient's own bowel. It is this rapid onset of septicemia which makes the operative treatment of acute intestinal obstruction so futile in the majority of cases and therefore to advance the therapeutics of intestinal obstruction one must first deal with this element of septicemia. The stomach seems not to lend itself to this form of blood-poisoning; the colon too would appear to possess a natural immunity up to a certain point; but

in the lesser bowel the process is desperate, rapid, and almost hopeless. The treatment demands two things,—

(1) Early operation.

(2) Evacuation of the bowel contents after the strangulation has been relieved. As the patient is really dying, not because his bowel is occluded, but because the distended gut, above the obstruction, is producing a poison which is rapidly sapping his strength, so the real danger rather lies, not at the seat of obstruction, but in the contents of the intestinal canal. Consequently of recent years he has not considered the operation complete until he has emptied the bowels of its contents. This is most conveniently done by bringing the most distended portion of bowel to the parietal incision and evacuating it by means of a glass tube, secured to the bowel by a single encircling thread. The small artificial anus being closed without difficulty by a subsequent operation. This measure has had the effect, in his own practice, of reducing the mortality one-half its original rate.

This latter method of treatment was advocated by Travess some eighty years ago, and the advances of a century have done nothing to overthrow his arguments. To appreciate and deal with septic processes within the intestinal canal must be one of the very first rudiments of intestinal surgery. Antiseptic surgery has practically left untouched those forms of infection in which the septic element is, in a certain sense, introduced into the system from within. Allusion has been made to the infection in acute intestinal obstruction; without going fully into the matter, it may be said that, in the majority of non-traumatic cases of peritonitis,—excluding the puerperal and the tuberculous varieties,—the infection comes from the patient's own bowel, and is caused by the bacillus coli communis. It is possible that this micro-organism will be found to include several different species. Experiments have shown that the peritoneum will stand a moderate degree of infection from this bacillus, provided it comes from a normal bowel, but that the same degree of infection from an unhealthy bowel would produce a peritonitis. Experiments have also shown that in an artificial compression of the bowel the epithelium rapidly desquamates, the vessels dilate, and there is an abundant infiltration into the wall of the intestines, and that the virulence of the micro-organism is infinitely greater in the disturbed portion of the bowel. These facts impress upon us the importance of gentle handling of the bowel during the operation and evacuation of the obstructed loop. From these few remarks it is evident that the need of further bacteriological studies in regard to the bacillus coli communis is urgent. Their function and purpose, the circumstances modifying their virulence, the conditions needed to apply the principles of antisepsis to the lumen of the bowel, all need to be inquired into. In regard to inguinal colotomy the author remarks that this operation has entirely superseded that of the loin. The two former objections to this operation—namely, contraction of the orifice and prolapse of the bowel—seldom occur at present. The catarrh of the bowel and also the prolapse of the bowel can be eradicated to a large extent by strict antiseptic treatment of the wound. The necessity of this operation has been rendered less frequent by the numerous instances of resection, especially for cancer. In carcinoma the best results are obtained when the growth is situated in the sigmoid flexure, or in such other portions of the large intestine as have a free mesocolon, and where the bowel is denuded of peritoneum. It is essential for success that the growth be dealt with early, and that the excision of the gut and the associated mesocolon be dealt

with as liberally as possible. When excision is impossible, a lateral anastomosis can be carried out, as experience has shown that a considerable portion of the circuit can be thrown out without inconvenience to the patient. The best stitch for intestinal suturing is still the ancient one, which includes a fine continuous suture of the mucous membrane, combined with a few interrupted Lembert sutures. When suturing is impracticable, on account of the difference in size of the two segments, the Murphy button seems to fill nearly all requirements. The author has used the Murphy button in fifty cases, and finds two objections, indefinite retention and contraction of the artificial opening, these two being in close relation as cause and effect. Those cases of contracture are most liable to occur when the upper viscus, be it stomach or colon, is much dilated at the time of operation.

THERAPEUTICS.

UNDER THE CHARGE OF

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AND

ARTHUR A. STEVENS, M.D.

Europhen and Euphorin.—A Correction.

In the last issue of the Magazine, on pages 163 and 164, under the abstract headed "The Therapeutic Value of Recent Synthetic Analgesics: their Benefits and Attendant Risks," the word *Europhen* appears where *Euphorin* was intended. Europhen is a synthetic compound, containing about 20 per cent. of iodine, and is chiefly used externally as a substitute for iodoform. Euphorin, or ethyl carbanilate, is employed internally in doses of five to ten grains as a powerful analgesic.

It is unfortunate that two drugs having such widely different properties should have names so nearly alike.

Treatment of Lead Colic.

Delearde, of Tille, France (*Cleveland Medical Gazette*), has treated five sick with lead colic by injecting 500 cubic centimetres of normal salt solution under the skin of the abdomen; in all the cases muscular pain soon disappeared; after twenty-four hours, instead of the constipation, a beneficial diarrhea set in, lasting for two or three days, when it ceased.

Heroin.

Strube (*Berliner klinische Wochenschrift*, November 7, 1898) states that heroin has been introduced as a narcotic to take the place of morphine, and that it has a special action on respiration. The chief indications for its use

are (1) in dyspnea, where it is desirable to diminish the frequency of the breathing and to increase its death; and (2) in pulmonary affections, where an irritative cough and dyspnea, with insomnia, are produced by an accumulation of secretion. He has prescribed the drug in fifty cases, chiefly of phthisis. The dose is 0.005 gram, in pill or powder. It has a slightly bitter taste, and is soluble with difficulty in water, but dissolves readily in water acidified with acetic acid. Not more than .01 gram was given as a single dose, nor more than 0.025 gram in the twenty-four hours. The effect was observed according to the dose, in from one-half to three or four hours. Heroin was also serviceable in allaying cough in hemoptysis. Strube thinks it is inferior to morphine as an anodyne. The soothing effect was very obvious. No ill effect was observed. The diminished rate of breathing was not due to collapse. The pulse was generally unaffected, or very slightly reduced in frequency.

Injections of Gelatin in Aneurism.

At a recent meeting of the French Academy of Medicine Lancereaux (*Medical News*, November 19, 1898) detailed "Three Cases of Aneurism which had been cured by the Subcutaneous Injection of a two-per-cent. Solution of Gelatin in Normal Salt Solution." Two of these patients had aneurisms of the aorta, and the other an aneurism of the right subclavian. From six to eight ounces of the solution was injected, and the dose was repeated as often as was necessary to accomplish the coagulation of blood in the sac. These injections, which have an incontestable value in aneurisms of a sacculated form, are of no use in fusiform aneurisms, for there cannot be a sufficient slowing of the blood-current in such a dilatation to permit of a cure by clotting.

Huchard succeeded in curing an aortic aneurism by fifteen injections of the gelatinous fluid. He has also stopped hemoptysis in phthisis by the same means. He looks upon the treatment as a most painful one and not altogether free from danger, especially if there is a branch artery given off in the immediate neighborhood of the aneurism.

Two fatal instances of the employment of gelatin occurred in the practice of Boinet and Barth. In one patient the injections resulted in the narrowing of the pulmonary artery, another was followed in a short time by the development of a bilateral pulmonary tuberculosis; while the other patient went into collapse and died almost immediately after receiving an injection. These instances confirm the power of gelatin to increase the coagulability of blood, but they also show that great caution should be observed in its administration. In no case ought the solution to exceed 1 per cent., and the injections should be made at sufficiently long intervals to enable the physician to judge of the effect of one before another is given. The patient should remain in bed throughout the period of treatment.

The Treatment of Asthma.

Beverly Robinson (*Boston Medical and Surgical Journal*, November 17, 1898) recently read a paper on the above subject before the American Climatological Association. If there is reason to suspect malaria in a case of asthma, he gives Fowler's solution until the physiological effect is produced. If constipated and the liver is inactive, he advises Warburg's extract in doses of five grains three or four times daily. For the anemia, a pill containing one

grain of reduced iron, two grains of muriate of quinine, and one-sixtieth or one-thirtieth of a grain of arsenious acid. In an attack, belladonna, chloral or nitro-glycerin, and as a last resort, chloroform inhalations or a hypodermic of morphine and atropine. Dr. Robinson believes in gout as an underlying cause in many cases. He related an interesting case in point, in which the cause was renal inadequacy due to gout, and in which the patient was restored to health by the use of three or four milligrammes daily of colchicine. Reflex causes are also to be removed.

For gastric catarrh, lavage and the use of Vichy or Vals water and an occasional mercurial purge are advised. Bronchitic and emphysematous types were referred to. Small doses of ipecac, tartar emetic, grindelia robusta, chloride of ammonium, and iodide of potassium were used where the secretion is scant; when profuse, belladonna or atropine may be added to these, or pills of camphor and quinine may be given. For cardiac distention and accompanying symptoms nitro-glycerin and nitrites may be used, or soluble salts of caffeine, such as the salicylate, or occasional bleeding will give relief. Nitrite of amyl was condemned as dangerous. The time to give morphine injection was indicated, and should be avoided if the pupils are contracted. Climatic treatment was also indicated.

Dr. F. I. Knight, in opening the discussion, called attention to the three factors entering into the production of asthma: first, an underlying neurosis; second, a lesion in the bronchial tract; and, thirdly, some excitant. In bronchial cases he urged strongly the value of potassium iodide. No one remedy had served him so well as this. In emphysematous cases rest should be insisted upon. The patient who has been miserable with repeated attacks of asthma at night for weeks and months may be, perhaps, relieved for a considerable time by restricting his movements and administering strychnine freely.

Dr. Johnson, of Chicago, agreed with Dr. Knight that the most important remedy was potassium iodide. It should be given in moderate doses, continued for weeks or months, if need be. The relief of the paroxysms is the important thing in the patient's extremity. In mild attacks this may be accomplished by the administration of belladonna and chloroform internally. Chloroform given internally acts more slowly than by inhalation, but the action is more prolonged and it is safer. In severe paroxysms the nitrites are often very useful. He prefers nitro-glycerin. Its action is very prompt, almost as prompt as nitrite of amyl. The vasomotor effect of one-hundredth of a grain can often be felt within two minutes. The dose may be repeated every ten to sixty minutes as required. Nitrite of amyl is much more dangerous in the hands of the patient than nitro-glycerin. Morphine is safer and more useful than the nitrites in asthma with greatly embarrassed right ventricle.

Dr. J. B. Walker, of Philadelphia, referred to one climatic factor that is within every one's reach,—namely, sunlight. A patient living on one side of the street may be exempt from asthma, while on the other he may be affected. This may be due to the fact that on one side he lives in a shady room, and on the other in a sunny one. This is a factor of no small moment, in not only the asthmatic, but in all subacute and chronic bronchial disorders.

The Local Application of Guaiacol in Pleural Effusion.

Prosorowski (*Deutsche Medizinal Zeitung*, March 31, 1898) has treated eleven cases of pleural effusion by the local application of guaiacol to the skin

of the affected side, and found the absorption was effected more promptly in this way than by the older methods of treatment. No untoward effects were observed. The applications were usually made from five to seven times. After the applications the temperature fell from one-half to five degrees Fahrenheit, but within two hours it rose again to its original height, or even higher. Two theories are suggested to account for the action of guaiacol. (1) Stimulation of the nerve-endings produces an effect upon the vasomotor centres, and thus indirectly increases the absorptive power of the pleura; (2) the guaiacol, being absorbed, destroys the noxious agents produced by the pleurisy.

Ergot in Chronic Malaria.

Jacobi (*Medical News*, October 22, 1898) reports cases, and concludes from his use of ergot that (1) certain cases of chronic intermittent fever occur, with large tumefaction of the spleen, which, having resisted the action of quinine, arsenic, etc., are benefited by ergot. (2) The contracting effect of the ergot is noticed within a reasonable time, when the splenic enlargement is not old or firmly established. (3) The attacks will disappear before the diminution in the size of the spleen is very marked. (4) Chills are not noted, as a rule, after the use of ergot, though temperature remains irregular. (5) Plasmodia do not disappear so rapidly as with quinine, where the latter is effective, though many apparently intractable cases get well with ergot.

OBSTETRICS.

UNDER THE CHARGE OF

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ASSISTED BY

W. A. NEWMAN DORLAND, M.D.

Labor in Contracted Pelvis.

Matseevsky (*St. Petersburg University Thesis*, 1898) inquires, Which is more favorable to the mother and to the child in the treatment of labor in contracted pelves of the first and second degree, the performing of version or the expectant plan? He reports fifty-nine cases in which version was performed, and 215 cases in which the expectant plan of treatment was adopted. The comparison is not at all in favor of version. As far as the mother is concerned, the result is the same in both methods; for the child the expectant plan is much more favorable. The advantages of the expectant method were most apparent in the most difficult cases,—that is, where there was the greatest disproportion between the size of the fetal head and the capacity of the pelvis. This may be explained on the ground that the after-coming head is much less capable of moulding itself to the shape of the pelvis. Matseevsky concludes that in and of itself a contracted pelvis should never be regarded as an indication for version.

Vaginal Examination and Vaginal Douches in Normal Labor.

The following conclusions are offered by G. P. Shears (*Medical Record*, September 17, 1898): The common custom of making frequent vaginal examinations during the whole course of labor is unscientific and unsafe, and it should be the aim of the conscientious obstetrician so to familiarize himself with all extravaginal methods of diagnosis as to reduce the necessity for vaginal examinations to the minimum. All intravaginal manipulations are especially objectionable after delivery. When the vaginal secretions are normal antepartum douches are unnecessary and harmful. Upon this point the researches of Leopold and Goldberg, as well as those of Fischel and others, seem to be conclusive. In normal cases the single postpartum douche is unnecessary, and therefore objectionable. The routine use of douches during the normal puerperium is contraindicated. Lusk says: "In hospital practice they have invariably increased the morbidity and the mortality-rate. It is, of course, to be understood that these conclusions apply only to normal cases, and in no way forbid the most searching examination or thorough disinfection when indicated. Should a douche be necessary, then only a glass tube, perforated at the sides, should be used. The solution should be as hot as can be comfortably borne, but should not be too hot. As sometimes given, it causes unnecessary pain, and may even, by constricting, if not actually cauterizing the superficial vessels, interfere with drainage, retard the necessary postpartum changes, and thus actually aid in producing sepsis. The tube should be managed without introducing the fingers. To distend the ostium vaginæ and carefully search for clots is to invite sepsis. Whether the air of the lying-in room may carry the germs of puerperal infection is still, perhaps, *sub judice*, but there can be no doubt that freely to admit air to the vagina after delivery is the surest way to cause decomposition of coagula, previously harmless."

Artificial Dilatation of the Os during Labor.

Demelin (*L'Obstétrique*, July 15, 1898) gives the following indications for dilatation of the os during labor: (1) Faulty insertion of the placenta. He reports eleven cases without a death. (2) Eclampsia and uremia. If the cervix is partially dilated the opening may be enlarged by Bonnaire's method, and the uterus emptied. If the eclampsia occurs prior to the onset of labor the usual methods should be tried first, such as venesection, purgation, chloral hydrate, and chloroform. Labor may begin or the condition ameliorate under such a course of treatment, when bimanual dilatation may be accomplished. If, however, after ten to twelve hours of treatment there be no improvement, the labor should be induced by dilating the os. (3) Apoplectic coma and asphyxia from cardiac disease. This method in these cases may be successful in securing living children from dying mothers, and Cesarean section thereby be avoided. (4) Fetal complications. When fetal life is jeopardized Bonnaire's method will give increased chances of life to the infant. (5) Amniotic infection, a very decided indication for rapid dilatation and delivery. (6) Faulty and dangerous presentations, for instance, shoulder and brow. The method may likewise be employed to dilate the cervix after symphyseotomy. (7) Excessive prolongation of labor in the first stage, as from primary and secondary rigidity of the cervix, protracted simple inertia, and uterine inertia in prematurely induced labor. Bonnaire's method consists in introducing the index-finger of

the right hand within the internal os, and gently pressing down by a sort of eccentric massage. The index-finger of the left hand is then introduced, and the two together work slowly and gently, causing the cervical sphincter to yield from fatigue rather than as the result of violence. Gradually the middle finger of the right hand and that of the left are introduced, and then the fourth finger of each hand. Dilatation may then be readily accomplished. In forty-nine cases so treated by Demelin there were two deaths, one from eclampsia and one from apoplexy. The method is most successful after labor has begun, but it may succeed during pregnancy, though the process will be of longer duration and require greater care. The internal os is the one to be acted upon, and it is very resistant, except in the case of dying patients or in abnormal implantation of the placenta. Other methods which he has tried have not given satisfaction. By this method there is no danger to the welfare of the mother and the lacerations of the cervix that result are trifling. The child should never be extracted before thorough dilatation of the cervix.

Tumors of the Placenta.

Albert (*Archiv für Gynäkologie*, Vol. lvi, Part I) has collected all the recorded cases of placental tumors, and adds particulars of four others. The thirty-six previously recorded tumors are classified as follows: Fourteen cases of myxoma fibrosum, ten of fibroma, nine of angioma, two of sarcoma, and one described by Merttens as hyperplasia of the chorionic villi. Albert criticises the naming of the last three. Sarcoma implies malignancy, and in the two cases so described there was no evidence at all of malignancy. He thinks these two, as well as Merttens's tumor, would be better described as angioma fibro-myxomatosum. The author's four cases were all of the nature of angioma. The site of origin of these tumors is discussed, and is concluded to be the allantois, inasmuch as neither amnion nor decidua had anywhere any relation to the tumor. The cause of these tumors was given by Goodhart as the organization of blood-clot; by Storch, as a previous endometritis; by Hildebrandt, as degeneration of placental villi under the influence of dilatation of vessels and stasis of blood in them. The author attributes the growth to a proliferative rather than a degenerate process in the villi. As to clinical symptoms, in four cases there was hydramnios, in six there was severe hemorrhage, and in one eclampsia. The prognosis for the child is bad; twelve only out of thirty-six are stated to be normal, ten were premature, three still-born. In five cases in which labor was at term the child did not reach the average weight. A good bibliography completes the paper.

Symphyseotomy.

Carr (*American Journal of Obstetrics*, October, and *New York Medical Journal*) quotes Lusk as saying of symphyseotomy that "its worst enemies are those who preach its simplicity and who ignore the risks involved in its employment. It is not in all cases easy of accomplishment. The avoidance of hemorrhage and lacerations calls for constant vigilance, and the after-treatment involves an infinite amount of painstaking."

Dr. Carr says that, from his own observations and those of others, he thinks he may safely say that the most objectionable features of the operation

are the difficulty and discomfort of keeping the bones in apposition by the methods in vogue, and the consequent danger of pinching the urethra or bladder, the danger of hemorrhage, and the danger of infection in a wound so close to the vulva and urinary meatus. He believes, however, that by careful attention to technical details all these objectionable features may be overcome.

The ordinary rules of asepsis and antisepsis must, of course, be rigidly observed, and, in addition, he has the following three suggestions to make:

(1) The incision need not extend as low as it is usually made. The lower angle of the wound may be pulled down with a retractor, after the incision has been made down to the bone, and sufficient room thus gained to complete the operation safely without extending the skin wound nearer than two inches to the urinary meatus. This he believes to be an important detail, as it greatly lessens the chances of infection.

(2) The bone should be carefully and thoroughly separated from the tissues behind and below, great care being taken to keep next to the periosteum. It is also important that this separation should extend from three-fourths of an inch to an inch on each side of the median line, to insure the safety of the blood-vessels and the urethra when the bones are separated. Several large anterior vesical veins and veins from the clitoris lie embedded in the fat and loose connective tissue between the anterior wall of the bladder and urethra and the posterior and inferior surface of the pubic arch; but these vessels are safe and the urethra is safe if freeing of the bone is carefully done. After the bones are freed all around, the joint may be divided with a Galbiati knife, or preferably with an ordinary scalpel if the precaution is taken of first passing a grooved guard behind the line of incision, as recommended by Farabœuf, Lusk, and others. The articular surfaces are not plane surfaces. Irregular rounded projections of bone, except in very young subjects, will frequently be found passing across the median line from one side or the other and fitting into corresponding concavities of the opposite bone, with only a thin layer of cartilage between. This makes the line of incision irregular, and the irregularities can be better followed with a thin, sharp-pointed knife. If a thick knife is used these bony projections must be forcibly cut through.

(3) He would recommend wiring the bones. He can conceive of no possible valid objection to uniting them firmly with stout silver wire, and believes that this will very materially shorten the time necessary for firm union, that it will insure firm union, and that it will add immensely to the comfort of the patient subsequent to operation. He is aware that necrosis and suppuration have been attributed to the use of silver wire, and should infection of the wound occur it would be an easy matter to remove the wire. Farabœuf, Pinaud, and Caruso recommend silk sutures through the tough ligamentous tissue anterior to the pubes. Such silk sutures are, he says, worse than useless. When the strain of separation comes upon them they will tear through the tough tissues like hot wire through butter; and silk ligatures are vastly more irritating and vastly more apt to become infected than silver wire.

Hydrocephalic Child born in an Unusual Manner.

At the Academy of Medicine, July 26, 1898, Narich (*Medical News*, October 8, 1898) reported the case of a woman, aged 36, who was in labor with her second child for fifteen hours when he was called to see her. The body and four limbs were already born, and examination failed to show any mem-

branous spaces in the base of the skull, which was the only portion accessible to the finger. Attempts to apply the cephalotribe failed. Incision of the vertebral column allowed an enormous quantity of fluid to escape, and the hydrocephalic head was then born spontaneously. Examination of the fetal head showed a fracture in the occipital bone which made it possible for the contained fluid to escape in the manner described.

Abortion due to Quinine.

Assistant Surgeon Balagapal (*Indian Medical Record*, October 1) records the case of a woman, about twenty-one years of age, who, being in the third month of pregnancy, aborted after taking the fourth dose of a mixture containing two grains of quinine to the dose, which was prescribed for malarial remittent fever.

GYNECOLOGY.

UNDER THE CHARGE OF

CHARLES BINGHAM PENROSE, M.D.,

ASSISTED BY

H. D. BEYEA, M.D., AND H. L. WILLIAMS, M.D.

Ruptured Uterus treated by Gauze Packing.

Mayo Robson (*The Practitioner*, July, 1898) has contributed a most interesting article to the London Obstetrical Society on the above subject. Rupture of the uterus is one of the most trying complications with which the obstetrician or general practitioner can be confronted, and requires prompt action and presence of mind.

If rupture occurs before delivery and the child escapes into the abdomen, the only possible chance of saving the patient's life lies in immediate abdominal section. Shock and hemorrhage are both progressive, and a delay of even half an hour may render the operation hopeless.

It is scarcely realized how few instruments are actually necessary to perform a hysterectomy under such circumstances. While the abdomen of the patient is being prepared, and the other necessary arrangements completed, an operative kit can be quickly improvised. A skein of silk, a piece of baby bottle tubing, a knitting-needle, a knife, a few hemostats, and needles, constitute all the requirements. A few napkins, towels, and handkerchiefs can be boiled at the same time, in the same or another dish, to be used as sponges.

When the abdomen is opened the ruptured uterus is drawn forward, and the elastic tubing tied around it, either above or below the ovaries, according to the site of rupture, to control hemorrhage. The ends of the tubing should be caught with a few stitches for the sake of safety, to prevent slipping. The knitting-needle can then be pushed through the uterus just above the ligature and the portion beyond be amputated. Fetus and placenta can then be ex-

tracted through the abdominal wound, and the abdominal cavity flushed out with normal salt solution at a temperature of 105° F. If a small quantity of the solution is left in the abdomen after hastily mopping it out with the boiled handkerchiefs, it is rather an advantage than the contrary.

The abdomen is then closed with sutures of the boiled thread, and if the operator and assistants have been thoroughly careful in preparing their hands, a safely aseptic operation has been accomplished. There is, however, a class of cases in which the rupture occurs in the lower uterine segment at the time of delivery, and is frequently only noticed later, when hemorrhage and increasing shock draw attention to the fact that there is something wrong.

Then there is usually more time for deliberation. Shock may not be immediate and hemorrhage may not be so violent as to produce collapse at once.

Frequently the rupture will not be discovered by a simple vaginal examination, as the lower portion of the cervix may not be torn through, but if the finger be passed through the patulous os, the tear in the uterus may be felt and the symptoms understood.

The writer considers it doubtful whether in many of these cases hysterectomy is the better operation. Two cases are quoted in which, when this operation was attempted, the patient died upon the table.

Robson then quotes a case of his own which he treated successfully with gauze packing.

Being suddenly summoned to a case in which rupture of the uterus had occurred after abortion at three months, he arrived to find the patient blanched and in a condition of profound shock. The vagina, os, and cervix were found intact, but a considerable rent in the posterior wall of the uterus opened directly into the peritoneal cavity. The abdomen was somewhat distended, and on pressure over the hypogastric region blood could be made to run out of the vagina.

The cervix was divided up to the beginning of the tear, the fundus curetted and washed out. Then, after pressing all the free blood possible out from the abdomen, long strips of iodoform gauze were passed into the uterus until Douglas's pouch, the laceration, the cavity of the uterus, and the upper part of the vagina were tightly packed. A firm pad was then applied over the abdomen and held by a binder. The packing was changed for the first time on the third day, and on every second day thereafter. No peritonitis followed, and the patient made a slow but uninterrupted recovery.

The author advises that packages of sterile gauze should always be kept ready for emergency, even if only to be used for first aid, until a subsequent operation under more perfect conditions can be performed

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Uterine Fibroids.

Henry D. Ingraham (*American Journal of Obstetrics*, November, 1898) presented a paper before the American Association of Obstetricians and Gynecologists, September, 1898, in which he contributed some valuable observations from his own personal experience. No light can be thrown on the etiology. Age and race may act as predisposing factors, but as to the exciting cause we know nothing. While the majority of uterine myomata grow slowly, others, which are not fibrocystic, grow rapidly. Still others may grow slowly for a long time and then take on a rapid development. Usually after the menopause these tumors become indurated, or cease to grow, but Dr. Ingraham

has seen two cases in which the tumor began to develop rapidly after this period, and developed complications which required removal.

One fibroid under observation was found to have shrunk two-thirds in size, while the patient was still in the prime of life, without any treatment being followed, and without any apparent cause.

Of the many degenerations which are said to take place in fibroid tumors, the writer has seen only three,—viz., fibrocysts, calcification, and suppuration. Two large pus-cavities were found in different parts of the same specimen.

It is considered that malignant degeneration is possible, but that it occurs so rarely that it should not weigh much as a reason for operative interference. But he considers that changes frequently take place in other organs which are serious and necessitate the removal of the tumor. To prevent such changes the tumor should be removed before they occur, even if it is not causing particular symptoms. Among the changes observed in other organs are fatty degeneration of the liver, ascribed to change in the portal circulation; diseases of the kidneys, such as pyelitis, pyelonephritis, or hydronephrosis, which are caused by pressure on the ureters, and disease of the heart. In thirty-three cases in which accurate observation was made, fourteen were found to have some form of heart lesions, and this bore no relation to the size of the tumor. In all of these cases with cardiac complication, except two, the menstrual flow was excessive and prolonged. Hence the writer assumes from his own experience that metrorrhagia and menorrhagia are most frequent causes of heart lesions with uterine fibroids, and suggests that the frequent loss of blood may produce anemia and general weakness, with weakness of the heart muscle itself, favoring the production of an organic lesion, rather than that the heart trouble, results from increased vascular pressure, as held by Pozzi.

The writer concludes from his observations that any form of fibroid, when the loss of blood is greater than normal, is dangerous, the danger being proportionate to the amount of anemia, and that the tumor should therefore be removed.

Good results have been seen to follow in a few instances from the use of thyroid extract. But in most cases the removal of the tumor by hysterectomy or myomectomy is advised.

Heart lesions, unless far advanced, are not a contraindication to operation. Ingraham recommends as a rule that all fibroid growths which do not cause any trouble should be let alone, but watched carefully, and operated upon immediately if it becomes troublesome in any way.

Hyperthermic Baths in Metrorrhagia.

M. Veyrieres (*La Presse Médicale*, August 20, 1898) reports two cases of metrorrhagia in young girls which he successfully cured by hot-bath treatment.

The first case was that of a little girl, 12 years old, in whom menstruation appeared unattended by pain or fatigue, and continued uninterruptedly for several months instead of stopping normally. This patient was treated at La Bourbuile, by hyperthermic baths varying in temperature from 36° to 41° C.

The baths were continued for twenty minutes daily, and at the end of six days the flow had ceased entirely. Ten days later it reappeared as a normal menstruation, and for the two years since that time has continued entirely regular, with no return of metrorrhagia.

The second patient was a girl, 16 years old, in whose case a slight lipoma

was removed from the anterior lip of the cervix with the hope of relieving the metrorrhagia, but without result. Precisely the same line of treatment was followed in this case as in the one cited above, with equally successful results.

The subsequent history of this case could not be followed, so that the permanency of the cure could not be stated.

The author merely quotes these cases as having been successfully treated in this way, after other means had failed, without attempting to account for the success of the baths.

The only details to be observed are to have the room thoroughly ventilated during the bath, have the patient lie down at once when it is over for half an hour, and avoid the danger of catching cold, since the subsequent perspiration is profuse.

PATHOLOGY.

UNDER THE CHARGE OF

JOHN GUITÉRAS, M.D.,

ASSISTED BY

DAVID RIESMAN, M.D.

Tumors of the Spinal Cord and of the Vertebræ.

Fischer (*Beiträge für Klinik der Rückenmarks und Wirbeltumoren*, Jena, 1898) published an account of tumors of the spinal cord, based upon fifty-six personal observations and the published cases. Of the tumors involving the spinal cord 57.7 originated in the vertebræ, and 42.3 were of intravertebral origin. Of the whole number, about one-fifth were intramedullary, and about one-tenth grew from the membranes, nerve-roots, and cauda equina. In 400 cases growing within the spinal canal, and not from the vertebræ, the following was the order of frequency: Sarcoma, 107; tubercle, 64; echinococcus, 44; fibroma and neuro-fibroma, 33; gumma, 28; glioma, 20. In 115 of the 400 cases, the tumors were multiple. In about one-third of all the cases, operation was possible. The fact that primary tumors of the cord and meninges do not give rise to metastases was confirmed. In children under 10 years the most common tumors were tubercle, lipoma, and sarcoma. From the 10th to the 40th years, tubercle, glioma, sarcoma, and hydatid cysts were the most common growths. In later life gumma was the most common intramedullary tumor. Injury is thought to be an important etiological factor.

Do the Muscle-Fibres of the Heart have a Sheath?

Glaser (*Virchows Archiv*, 154, Heft 2, p. 291) by staining paraffin sections with picrocarmin was able to demonstrate a sheath or sarcolemma about the fibres of the heart-muscle. It is best demonstrated in cases of fragmentatio myocardii, and is much more delicate than the ordinary sarcolemma of muscle.

Agglutination of the Bacillus of Tetanus.

Courmont, at a meeting of the Société de Biologie, December 3, 1898 (*La Semaine Médicale*, December 7, 1898), reported that neither the normal serum of human beings nor that of such susceptible animals as the mouse, guinea-pigs, rabbit, and frog, nor that of more or less refractory animals, like the fowl and tortoise, causes any agglutination of the tetanus bacillus. Horse and ass' serum always agglutinates, but only in strength of no less than 1 to 100. Neither spontaneous nor experimental tetanus develops any agglutinating property in the blood, hence the sero-diagnosis of tetanus is out of the question.

Antitetanic serum is strongly agglutinating, acting even in the strength of 1 to 50,000. The injection of such serum does, however, not lead to the development of any agglutinating property, the agglutinating substance being destroyed in the organism. There is no relation between immunity or natural susceptibility to tetanus and the agglutinating power.

The Action of Cobra-Poison on the Blood.

J. W. W. Stevens and W. Meyers (*Journal of Pathology and Bacteriology*, October, 1898) find that when cobra-poison was added to the blood *in vitro*, two changes are observed, hemolysis and laking of the blood and complete absence of clotting. They find that the hemolytic action is neutralized by antivenomous serum, and that the action of the latter is specific. In certain conditions the measure of this neutralization *in vitro* is a measure for the neutralization *in corpore* for guinea-pigs. The neutralization is *chemical*, not cellular or vital. Regarding the clotting of the blood, they found also that the action of the venom was neutralized by antivenomous serum *in vitro*, and that this action was specific, and that for certain diseases the measure for the neutralization *in vitro*, using clotting as the test reaction, was also the measure of neutralization *in corpore* for guinea-pigs. The neutralization of the toxin by antitoxin *in vitro* was certainly not vital nor cellular but chemical.

The authors' experiment seems, then, to support Ehrlich's view that antitoxin renders the toxin harmless by combining with it; for it is reasonable to assume that if in the test-tube the antitoxin counteracts the toxin, it is able to do the same in the body.

The Changes occurring in the Blood of Dogs after removing the Thyroid Gland.

A. G. Levy (*Journal of Pathology and Bacteriology*, October, 1898) has studied the effects of thyroidectomy in dogs on the corpuscles, hemoglobin, specific gravity, fibrin, proteids, total solids, and the ash of the blood. In the first dog he found that fresh air and good housing played as important a part as the food in preserving the animals. Munck has pointed out that milk retards the appearance of symptoms. Levy found that milk and alcohol mixed was the best restorative. Diminution of either hemoglobin or red corpuscles, or both, was often observed, but was not constant. It was never very intense. The white corpuscles were increased. This increase could not be due to suppuration in the wound. The specific gravity always diminished after thyroidectomy. The percentage of fibrin is invariably increased. The total solids

were decreased. The proteids were also decreased. The total nitrogen was also reduced. There was also a reduction in the solids of the blood-serum. The most striking point noticed in the experiment was the apparent chance-fashion in which one constituent of the blood was more specially affected now and then another. This was true of all the phenomena following thyroidectomy.

A Note on the Bacteriology of Lymphadenoma.

J. H. Abram (*Journal of Pathology and Bacteriology*, October, 1898) examined bacteriologically a case of lymphadenoma and found a small micrococcus, hitherto not described, but which has nothing to do with the disease, because it was found only on one occasion. He always found staphylococcus albus, but that was explained by the presence of an acute febrile condition.

DERMATOLOGY.

UNDER THE CHARGE OF

LOUIS A. DUHRING, M.D.,

ASSISTED BY

M. B. HARTZELL, M.D.

A Singular Case of Psoriasis.

Didama (*Philadelphia Medical Journal*, November 19, 1898) reports the case of a man, 60 years of age, who had been under treatment for fifteen years for spinal disease, during which time morphine was administered every day for the relief of the severe pain accompanying his malady. For five years numerous patches of psoriasis, varying in size from half an inch to an inch and a half in diameter, had appeared on the limbs and body. The itching and burning accompanying this eruption were so severe as to entirely prevent sleep, and, in order to obtain relief, the patient was in the habit of slicing the thick scales off to the level of the surrounding skin. Didama concluded that the psoriasis was the result of the morphine habit; and upon suspension of the morphine the psoriasis disappeared in six weeks' time. A similar case in which psoriasis was the result of the opium habit has more recently come under the author's observation.

Lupus Erythematosus: Its Amenability to Treatment.

James C. White (*Journal of Cutaneous and Genito-Urinary Diseases*, October, 1898), in a paper introductory to the discussion upon lupus erythematosus, read at the twenty-second annual meeting of the American Dermatological Association, declares this malady to be the most refractory to treatment of all cutaneous diseases. In cases of an inflammatory type, or if the patient's skin be easily irritated, only the most soothing applications should be employed. In cases

with acute multiple lesions such remedies are the only ones likely to be tolerated. In every instance it is judicious to try soothing applications first, since far more benefit is to be derived from such in a greater number of cases than from severe measures. As preparatory and occasional applications black wash, the oxide of zinc, calamine, and the Boeck wash may be used, and sulphur ointment, or zinc oxide and sulphur wash, white precipitate ointment, salicylated soap plaster (10 to 20 per cent.), and lactic acid as stimulating remedies. When milder means fail iodo-glycerin (iodine, potassium iodide, aa one drachm, glycerin, four drachms) and mercurial plaster may be tried.

Pustulosis Acuta Varioliformis.

Juliusberg (*Archiv für Dermatologie und Syphilis*, Band xlvi, Heft 1) reports a fatal case of pustular eruption, in a child 18 months old, which externally resembled to some degree variola and varicella, but clinically as well as microscopically was sharply separated from both these affections. The eruption appeared in crops, the lesions pustular when fully developed, all going through the same stages of development, and healing without scars. The disease seemed to have been the result of infection with the staphylococcus pyogenes aureus, although this was not certainly established. It agreed in most of its features with the pustular eruption complicating eczema in rare cases, named by Kaposi eczema herpetiforme.

A Case of Psoriasis with Persistent Achromia localized in Certain Nerve Areas.

Hollopeau and Gasne (*Annales de Dermatologie et de Syphiligraphie*, No. 7, 1898) report a case of psoriasis, occurring in a girl 8 years of age, in which the disappearance of patches of eruption in the groins was followed by persistent loss of pigment in the areas formerly occupied by the patches. Upon the right upper extremity the eruption presented itself in the shape of a band following the distribution of the nerves.

The Resorptive Power of the Skin.

Brock (*Archiv für Dermatologie und Syphilis*, Band xlv, Heft 3), as the result of his own experiments and a study of the investigations of others, concludes that resorption of soluble, non-volatile substances by the skin may be produced by the cataphoric action of the galvanic current; and certain isolated volatile substances can pass through the normal skin. For all other chemical bodies the skin can only serve as a port of entry into the organism when its structure has been changed.

The Treatment of Lichen Planus by External Remedies.

Rona (*Archiv für Dermatologie und Syphilis*, Band xlvi, Heft 2), at a session of the Hungarian Dermatological Society, reported two cases of lichen planus treated by local applications exclusively. In the first case a woman, 52 years of age, there were numerous small patches of eruption on the inner surface of the thighs and a larger plaque on the left wrist, the disease having

lasted four months. Under the use of a 10 per cent. chrysarobin traumaticin the eruption disappeared. In a second case favorable results were obtained by the application of a 10-per-cent. solution of salicylic acid in alcohol.

Tuberculoses of the Skin consecutive to Measles.

Du Castel (*Annales de Dermatologie et de Syphiligraphie*, Nos. 7, 8, 1898) believes that it is not exceptional for a disseminated tuberculosis of the skin to develop after measles. This tuberculosis affects the extremities, particularly the upper ones, the face, and, in a less decided fashion, the trunk. It occurs under the form of disseminated nodules, sometimes united in plaques varying in size from a fifty-centime piece to a franc. These lesions show themselves soon after the measles eruption and quickly reach their maximum development. When fully developed, they may persist for years without any appreciable change. Some of the nodules may disappear spontaneously with or without cicatrices. In a certain number of cases the eruption is accompanied by lichen scrofulosorum; in these there are also usually glandular or osseous tuberculoses.

MISCELLANEOUS.

The Treatment of Insanity from Traumatism.

Harrison describes four cases of insanity following fractures at the base of the skull, one following bullet wound of the brain, and three following blows upon the vault. It is a mistake to consider a patient out of danger as soon as a wound in the skull is healed. Such patients may develop insanity as a result of the depression of the skull or splinters of bone, or from a thickening of the bone, or from cysts. Seventy-seven such cases have been recorded, in which operation was performed for the resulting insanity, and of these only seven patients had been operated upon immediately after the accident, although in forty-eight symptoms of depression were present. It is interesting to note that in only four of these seventy-seven cases were the dura opened. This shows that an operation of this character is comparatively safe, while the improvement which follows in many instances is extremely gratifying.

Of the 77 reported cases, 5 deaths occurred. Of the 57 cases reported in the last seventeen years, only 2 patients died. Of mental recoveries, 51 are reported; of great improvement, 12 cases; of slight improvement, 5 cases; no improvement, 4 cases. Of these 4, 2 patients showed temporary improvement before relapsing, and in 1 there had been no local indication for operation.—*Medical News.*

BOOK NOTICES.

A Manual of Modern Surgery. General and Operative. By John Chalmers Da Costa, M.D., Clinical Professor of Surgery, Jefferson Medical College, etc. Philadelphia: W. B. Saunders, 1898.

This is really the second edition of this work, although it has been so largely rewritten and added to as to make of it practically a new surgery. The first edition appeared in 1894, and was intended by the author to "stand between the text-book and the compend." In some departments the matter was too much curtailed, a defect which has been corrected in many instances in the present edition.

Among the new sections that have been added are those upon the surgery of the liver and gall-bladder, the spleen, the pancreas, the female breast, wounds inflicted by modern projectiles, electrical injuries, and the use of the Röntgen rays. The following operations have been described: Resection of the Gasserian ganglion, methods of gastrostomy, Schede's operation of thoracoplasty, the use of the Murphy button, various new methods of enterorrhaphy, Bodine's method of colostomy, prevention of hemorrhage in hip-joint amputation by Macewen's method of aortic compression, Edmund Owen's operation for harelip, Senn's method of resection of the shoulder-joint, etc.

The work has been brought thoroughly up to date, and the subject is well covered. The general arrangement is convenient and satisfactory, and the make-up of the book is very much improved over the first edition. It is one of the best books of its class.

A Clinical Text-Book of Medical Diagnosis for Physicians and Students, based on the most Recent Methods of Examination. By Oswald Vierordt, M.D., Professor of Medicine at the University of Heidelberg; formerly Privatdocent at the University of Leipzig, etc. Authorized translation, with additions by Francis H. Stuart, A.M., M.D. Fourth American edition from the Fifth German: Revised and enlarged. With 194 illustrations, 8vo, pp. 603. Philadelphia: W. B. Saunders, 1898.

Vierordt's "Diagnosis" was one of the earliest books to emphasize the importance of a systematic method in the examination of the entire body as the foundation for a correct diagnosis. Without undervaluing the great helpfulness in diagnosis of the microscope and modern laboratory methods, he has insisted strenuously upon the value of our un-

aided senses, particularly the eyes, and has declared that after such a systematic study of the organs and of the body as a whole, we are prepared to individualize the case, which is of as great importance in diagnosis as in therapeutics. It is evident that Professor Vierordt's ideas have met with the approval of the medical profession, for in less than nine years there have appeared five editions of the book.

The present, the fourth American edition, is translated from the fifth German edition. It has been revised in all its parts, and altered or enlarged in many places, the parts receiving most attention being the sections on gastric digestion and the examination of the nervous system. The author has thought it best not to discuss at present the application of the Röntgen rays to medical diagnosis. This may be regarded by some as unfortunate, nevertheless, it must be admitted that it would be difficult at present to be precise in stating its value. We have failed to find any mention of auscultatory percussion, and palpatory percussion receives scarcely more than mention. Both these methods are deserving of consideration. These omissions, however, should not be taken as seriously marring the completeness of the book, which is a most admirably clear and precise exposition of medical diagnosis. It is also a pleasure to say that the book has lost nothing of its value in the hands of the translator.

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A CASE OF ACUTE MASTOIDITIS; PERFORATION OF THE MEDIAL PLATE OF THE PROCESS AND CONSECUTIVE ABSCESS IN THE NECK.

By Charles H. Burnett, M.D.,

PHILADELPHIA.

Subfascial abscesses in the neck, consecutive to acute inflammation in the tympanic and mastoid cavities, are said to be not uncommon in Europe, Collinet (Thèse de Paris, 1897) having based his thesis upon 200 recently reported cases. Three ways of propagation of the otitic and mastoid suppuration to the neck are recognized,—viz., by way of the veins, by way of the lymphatics, and by direct escape of the pus through a spontaneous opening in the medial plate of the mastoid process, beneath the insertion of the sterno-mastoid muscle. By this last-named way pus gets beneath the deep fascia of the neck and burrows either backward towards the nucha and the dorsal muscles, or forward, *via* the digastric groove and muscle, towards the pharynx, into which it may discharge itself; or it may burrow forward and downward in front of the sterno-mastoid muscle until arrested at the clavicle.

Consecutive abscesses in the neck, propagated thither by venous or glandular channels, are, as a rule, more superficial and restricted in their area, and hence less serious than the subfascial form. Cases of consecutive abscesses in the neck, from direct propagation through a spontaneous perforation in the medial plate of the acutely inflamed mastoid process, are the most serious, and therefore attract the most attention from the surgeon. After the pus has escaped spontaneously from the mastoid cavity to the deep tissues of the neck, the abscess shows no tendency to prompt spontaneous evacuation outwardly

through the soft tissues of the neck, and, if left to itself, it burrows farther and deeper inward, producing septicemia and death, especially if the abscess discharges itself into the pharynx or lung.

This form of acute mastoiditis, in which prompt spontaneous perforation of the medial plate of the process takes place, with consecutive burrowing of the pus in the neck, is known as "Bezold's mastoiditis," because Bezold, of Munich, about fifteen years ago, very fully explained the pathogeny and symptomatology of this form of mastoid disease, though its existence had been known for many years previous, and cases of it treated and reported.

It has usually been considered necessary, in a case of "Bezold's mastoiditis," to first open the mastoid cavity, and in some cases resect the mastoid process. A probe is then passed through the spontaneous opening in the mastoid process along the fistulous track of the abscess, and the direction of the latter being thus fully determined, a *counter-opening* in the neck is made by cutting down in the direction of the point of the probe inserted from the mastoid into the abscess-cavity. Thorough drainage is thus obtained of both the mastoid nidus and the gravitation abscess, and recovery follows promptly. It has generally been supposed that cure of a case of Bezold's mastoiditis demands both the mastoid trepanation and the counter-opening in the neck. While this may be necessary in some cases, it certainly is not demanded in every case, as the following history will show. I will premise the notes of my case by stating that I have been impressed by the large number of cases of ordinary acute mastoiditis, consecutive to acute otitis media, in a previously normal ear, that I have observed undergo spontaneous evacuation through the outer mastoid cortex, beneath the soft tissues, immediately behind the auricle. As soon as fluctuation is felt, in such cases, over the mastoid region, behind the auricle, a deep incision gives exit to the pus, the aural discharge, which has persisted,—as is usual in these acute cases,—now ceases in twenty-four to forty-eight hours, the ear regains its function, and the mastoid abscess heals in from one to six weeks, without any further operation on the mastoid than antiseptic injections through the incision over the mastoid, every day and then less frequently as the discharge diminishes. I have therefore asked myself the question, If this result can be thus brought about in cases of spontaneous perforation of the mastoid cortex behind the auricle and above the insertion of the sterno-mastoid muscle, why can it not be done in a case of "Bezold's mastoiditis," also, if prompt counter-opening in the neck is made? It seemed worth while to try to cure these cases with one incision, that in the neck, without the attendant risk of another opening, and that in the bone, that had already cleared itself by the spontaneous opening

in the medial plate of the mastoid process. In such a case, if the counter-opening in the neck should not be sufficient, it would be apparent in twenty-four hours at the longest, and then the mastoid could be opened by the surgeon. This course I resolved to follow in the case I here report:

L. O., 32 years old, single, white man, was admitted to the men's surgical ward, Presbyterian Hospital, December 5, 1898, with a history of acute otitis media, of three weeks' duration, and consecutive acute mastoid symptoms, chiefly pain, within the last week. He ascribed his ear-disease to a cold he had taken three or four weeks previous, and which he had disregarded at first. I examined this man for the first time on December 6, 1898, finding him free from pain in the ear and mastoid, though he was suffering pain in these regions when admitted to the hospital. There was a copious discharge of creamy, odorless pus from his right ear. Further examination revealed an infiltrated and narrowed canal and a perforation in the membrana tympani in the centre of the anterior half of its surface. The hearing was greatly reduced; but I learned that this ear had been the seat of chronic catarrhal deafness for some time previous to his present attack of acute otitis media. The mastoid region, behind the auricle, appeared perfectly normal, and there was no tenderness on pressure on its surface, nor pain in the ear, nor in the mastoid region, but behind and in front of the insertion of the sterno-mastoid muscles there was a swelling, extending downward for about three inches, most prominent, however, behind the sterno-mastoid muscle and towards the nucha. The appearance of this swelling was coincident with the cessation of mastoid pain. Firm pressure on this posterior swelling was somewhat painful, and forced pus from the middle ear, through the perforated membrana tympani, into the external ear. The diagnosis of the presence of a Bezold mastoiditis now becomes plain. The pressure upon the tumefaction below the mastoid process in the neck forced the pus back from beneath the deep fascia through the spontaneous opening in the mastoid process, thence through the cells, the antrum, the aditus, and middle ear, into the outer ear. The patient's temperature varied at this time from normal, 8 A.M., to 100⅖° F., 8 P.M., but, as the sequel showed, there was really no connection between the mastoiditis in this case and the temperature, as his temperature has continued to fluctuate in a peculiar way long after his aural and mastoid symptoms have disappeared. The patient has a neurotic history, has been a great smoker up to the time of his present illness, and has always been liable to sudden rise of body temperature upon fatigue or excitement.

The indications were plainly in favor of incising the deep abscess,

behind the upper end of the sterno-mastoid muscle. Therefore the patient was etherized, December 10, and an incision two inches long and about three inches deep was made, beginning behind the insertion of the sterno-mastoid muscle, at the lowest edge of the mastoid process, and going down to the bone. About a fluiddrachm of odorless pus escaped from the opening, and three arterioles were controlled by torsion.

A grooved director was passed down to the bone, entered an opening apparently in the base of the mastoid process, and passed with a little pressure into the cells. Sterilized water, syringed into the incision, passed readily into the middle ear and out of the external auditory meatus, and *vice versa*. A drainage-tube was then inserted in the neck-wound, a sterilized gauze compress laid over it, bandaged in place, and let alone for twenty-four hours. At the end of this time the aural discharge had nearly ceased, the neck-wound continued to discharge, however, though the upper part of the incision had begun to heal. Water could be syringed through the wound into the ear and escaped at the external meatus at this dressing, but not again. The drainage-tube was removed and the wound allowed to heal. The aural discharge ceased entirely in forty-eight hours, and the discharge from the counter-opening in the neck gradually diminished as the wound healed, and ceased entirely in a week with the healing of the wound. The ear and the wound had been syringed daily with bichloride solution (1 : 6000) until the aural discharge ceased, and then the counter-opening only till it closed. As the ear ceased running the tumefaction of the auditory canal disappeared, and the perforation in the membrana became plainly visible in the centre of the anterior segment. This perforation has now healed, January 1, 1899, the normal contours have returned to the membrana, and the hearing is relatively normal.

Regarding the etiology of acute mastoiditis consecutive to acute otitis media, I would say that as I have never seen acute consecutive mastoiditis in a case I have treated from the outset of the acute otitis media, I cannot regard any case of acute consecutive mastoiditis as a necessary result. It seems to me to be due to the artificial secondary infection of the middle ear and mastoid cavity from excessive syringing, and especially the use of peroxide of hydrogen, whereby pus is forced back into the middle ear, the aditus and mastoid antrum, and if a communication exist between the antrum and the mastoid cells, pus is forced into the latter and then the surgeon is confronted with a mastoiditis of his own creation. In all cases of consecutive mastoiditis I have been called to see, peroxide of hydrogen and excessive lavage had been employed. After either spontaneous or artificial per-

foration of the membrana tympani in an acute otitis media, the ear should be allowed to drain itself through that most excellent natural drainage-tube, the external auditory canal. The more local treatment the acutely inflamed and running ear receives the more likely it is to become macerated, irritated, and blocked, and the discharge impeded. Then secondary infection of the ear and mastoid is imminent, and consecutive mastoiditis very likely to occur. After the acutely inflamed ear begins to discharge, it should be allowed to run, as this running carries off pathogenic germs, and is, therefore, beneficial. The ear should be mopped dry with slightly singed cotton, the membrana inspected, and the extent and position of the perforation determined, if the perforation has been a spontaneous one. Valuable knowledge may be gained by early inspection as to the condition of the auditory canal, especially over the region of the antrum. The concha should then be greased with carbolated cosmoline, and a small ball of sterilized absorbent cotton or gauze placed lightly in the concha, and let alone till the drainage tuft is wet; then the latter should be removed and a fresh one put in the concha (not in the meatus and canal). Syringing may be needed once in twenty-four hours, if at all, and should never be done by any one but an expert, and never forcibly. In numerous cases it is not required at all. If the outer surface of the membrana require medication, it can be done with a mop under illumination with the forehead-mirror. We should not endeavor to treat the acutely inflamed middle ear by forcing medicaments through the perforation into the cavity. We cannot easily do it, but if we should succeed we would do more harm than good. Under cautious, expert manipulation, as above outlined, acute otitis media will be well in a week or two, and the function of the ear normal. But if any other course is pursued, the patient may be under treatment a long time. There are cases in which the patients infect their own ears, sometimes by interfering through the outer ears, and sometimes by Valsalvan auto-inflation of the tympana. But in such instances the patient and not the surgeon is to blame. In conclusion, let me say that all I have said in this article pertains to the etiology and treatment of *acute* otitis media and consecutive mastoiditis in a previously normal ear.

ARRHYTHMIA: SOME OF ITS CAUSES, ASSOCIATED CONDITIONS, SIGNIFICANCE, AND TREATMENT.

By J. M. Anders, M.D., LL.D.,

PHILADELPHIA,

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Cases of arrhythmia may be classified, according to their course, into (*a*) temporary and (*b*) habitual. Temporary arrhythmia may be evoked by toxic substances, by emotional disturbances, by mechanical embarrassment of the heart's action, and by various reflex causes. The condition may be overlooked, as it may fail to excite the attention of either the person affected or the physician. Temporary arrhythmia is, in my belief, more frequent than the permanent or habitual form of the disorder, and in many cases the irregularity vanishes either with the spontaneous disappearance, or the successful treatment, of the exciting cause or causes. The medical profession has hitherto scarcely appreciated the wide prevalence of trivial irregularities in healthy subjects. These are sometimes inappreciable by the usual methods of examination, but are readily revealed by the sphygmograph. As bearing upon this subject, Dr. T. Clifford Allbutt pertinently writes: "Strictly speaking, no pulse is regular, as a time-line at the foot of the sphygmographic tracing will prove; if not otherwise influenced, the respiration at any rate disturbs the order, as does muscular effort, even the slightest, especially in nervous or otherwise unstable systems."

A second classification, more acceptable than the above, because it gives a clue to the essential elements entering into the etiology and clinical manifestations of arrhythmia, has reference to irregularity (*a*) in volume and force, and (*b*) in time, the former of these being spoken of as "irregularity" and the latter as "intermittence." They are often present together.

Irregularity in the volume and force of the pulse embraces the so-called *pulsus alternans* of Traube. My experience indicates that this is a comparatively rare form of arrhythmia, and I have a fixed belief that it is not always a bad augury. Indeed, I have seen two cases in which I was constrained to class it as a functional disturbance.

In the majority of cases intermittence occurs at irregular inter-

vals. On the other hand, there is sometimes noted arrhythmic intermittence (*allorrhythmia*). I have observed this cyclical or rhythmic irregularity in persons with fatty overgrowth associated with more or less fatty degeneration of the heart-muscle, the dropped beat in one case occurring at the end of each inspiration, and also, in common with others, in persons taking large doses of digitalis. Moreover, cases are occasionally met in which this form of disturbance must be regarded as purely functional. True must not be confounded with false intermittence,—a distinction easily to be drawn by auscultating the heart while the pulse is being felt.

Closely related to pseudo-intermissions is the *twin-pulse*, the second beat of each couplet being often comparatively feeble, and rarely even wanting (intermittence).

The *pulsus bigeminus* is frequently observed in mitral disease, particularly after compensation is lost. Recently I found it present in an instance of arrhythmia due to a different cause: the notes of the case are briefly as follows:

A. M., aged 28 years, a tailor by occupation. The family history is without etiologic importance, if it can be relied upon. The patient had had the usual children's diseases; and during early adolescence enjoyed excellent health. Ten years ago he developed an unnatural fondness for alcoholic beverages, and from that time until one year ago he was guilty of excessive indulgence. The alcoholmania took the form of frequent drinking bouts or "sprees," lasting for a week or more. Between these debauches he would also indulge, though to a comparatively moderate extent. The patient had also been a moderate smoker during the same interval. I had occasion to see him at intervals of a few months, and during that period at no time observed an arrhythmia. About one year ago he developed an attack of pneumonia of grave type, from which, however, he recovered. During this illness he was attended by another physician, but a couple of months later fell under my care on account of an ordinary cold. He then informed me that he had given up the use of alcohol (and it may be added has not lapsed into his former habit up to the present time). While auscultating the thorax, I incidentally detected an interesting form of arrhythmia. In addition to the frequent presence of the *twin-pulse*, true intermittence and very rarely temporary, marked irregularity, both in time and volume, were noted. No organic changes were indicated by the physical signs.

The question arises, What was the cause of the arrhythmia in this case? It followed a discontinuance of the excessive use of alcohol. In the majority of cases in which alcohol produces arrhythmia a cure is speedily effected by an abandonment of the morbid habit. It

is to be recollected that the prolonged use of alcohol may also induce general arterio-sclerosis, including the coronaries, and, as is well known, atheroma of the latter is a frequent cause of arrhythmia. I was, however, unable to discover any positive evidences of arterio-sclerosis in the case under consideration. It is probable that the arrhythmia was dependent upon an exhausted condition of the cardiac muscle and ganglia, following persistent alcoholic excesses. Cases that arise during convalescence from the acute infectious diseases are, with rare exceptions, due to a similar cause. Indeed, it may be queried whether the arrhythmia was not due, in part at least, to the previous attack of pneumonia. This view also receives confirmation from the results of the treatment pursued. Acting upon the view expressed above, I resorted to gentle stimulation with strychnine and digitalis in combination, coupled with methodic physical exercise, and was rewarded by observing immediate, rapid improvement, and finally a complete cure. I have carefully excluded all other causes for the arrhythmia in this case, save, perhaps, the influence of tobacco, although smoking had been, and still is, indulged in to a very moderate degree.

The following case furnishes another illustration of approximated pulsations, or the shortening of the diastole, in series of three (*pulsus trigeminus*), occurring as a functional disorder, and yet unperceived by the patient.

J. M., aged 25 years, formerly a salesman, but now a medical student, consulted me on account of an influenzal bronchitis, January 3, 1899. The family history shows nothing save that the father died of hemoptysis. The patient had had children's diseases, after which he continued healthy, until three years ago, when he contracted a severe cold, and consulted a physician, who discovered an "intermittence." His last attack of bronchitis began December 8, 1898, or one month ago. At the time of his visit (January 3) cough was not severe, and the general health was good. It was on account of the protracted tendency manifested by the affection that he was led to consult me. On examining the chest, which was of normal build, nothing was discovered save a few sonorous and sibilant râles over the larger bronchi, and the *pulsus trigeminus*, combined with an occasional intermittence. I was, upon most careful search for some exciting or predisposing cause, unable to detect any influential factors whatsoever. The patient never suffers from cardiac palpitation: neither is he conscious of the presence of the arrhythmia, unless he lies upon his left side and places the tips of his fingers over the apex region.

Whilst the *pulsus alternans*, the *twin-pulse*, the *pulsus trigeminus*, and *pulsus quadrigeminus* are found associated with valvular lesions,

they are but little less frequently met in the absence of gross organic lesions of the heart or other organs, and are then, for the most part, to be regarded, until we receive additional light, at least, as forms of functional disturbance of this organ or is dependent upon the action of toxic substances.

I have previously reported three cases illustrating unusual forms of arrhythmia, and all of the cases developed in subjects in whom previously existing valvular lesions of the heart, as far as could be determined, were absent. Certain conclusions drawn from these cases may be restated here in sequence.

"(1) The presence of reduplication of both first and second sounds (double duplication) in the first two cases, one of tobacco-poisoning, the other exophthalmic goitre.

"(2) The occurrence of a typical *pulsus biferiens* in case one, dependent upon the toxic effect of tobacco, in the absence of combined aortic regurgitation and stenosis.

"(3) The presence of a cyclical increase in the rapidity of the movements of the heart, followed regularly by a brief pause; and the striking effect mechanically of the respiratory function upon this peculiar variety of arrhythmia.

"(4) The temporary production of apical systolic murmurs during the inspiratory element of the respiration."

The principal object of the present paper, and brief notes of the cases it contains, is to emphasize the fact that the forms of arrhythmia referred to above are to be looked upon as a comparatively harmless symptom unless they can be shown to be associated with grave conditions and diseases,—*e.g.*, cardio-vascular degenerative changes, Bright's disease, and the like. A rigid examination, however, of the heart and other viscera with a view to detecting the presence of organic causes is essential before referring any given case to the functional or harmless group. Furthermore, it is my firm belief that these are occasionally bottom factors in the production of conditions of more grave significance, particularly if nervous palpitation be, as happens, associated. This course of events, however, is preventable by an appropriate method of treatment,—one that does not lose sight of the importance of carefully regulated physical training.

On the other hand, my personal experience suggests that *embryocardia* (fetal heart rhythm), *delirium cordis*, and *canter rhythm* are rarely encountered apart from serious associated conditions, as dilatation (often extreme), arterio-sclerosis, Bright's disease, the profound anemias, and the myocarditis of certain acute infectious diseases.

Treatment.—For the physiologic arrhythmia, which is unassociated with detectable organic changes, I believe the proper course of treat-

ment lies wholly within the field of hygiene, and has especial reference to carefully regulated physical training, with a view to promoting bodily health and development. The cases that are due to psychical and reflex influences, and to such toxic substances as tea, alcohol, tobacco, as well as certain drugs (aconite, chloroform, digitalis, and the like), may be relieved and even cured by a removal of the special cause. The sudden removal from the alcoholist of his favorite *imbibitions* may lead to an exaggeration of the arrhythmia, but this is a temporary condition, at least if proper treatment be directed to the general condition of the patient. In the lighter, habitual forms of the complaint my experience promises that nothing is of greater value than systematic and carefully graduated exercise with a view to strengthening the heart-muscle; and this, coupled with measures, both hygienic and medicinal, that tend to benefit the general nutritive processes, has produced my own best results. In some functional cases there is a preponderating neurotic element, particularly in the female, and here I have found the valerianates quite serviceable.

The various causative chronic affections, as gout, Bright's disease, and saturnine-poisoning, are to be assailed by the usual measures, when arrhythmia develops in their course. The arrhythmia which is dependent upon dilatation or myocarditis, whether met in the acute infectious diseases or in chronic ailments, calls for the use of cardiac stimulants and tonics. Among the special remedies to be mentioned are digitalis, strychnine, strophanthus, and caffeine. It is a matter of common observation that digitalis, particularly when arrhythmia is secondary to chronic valvular disease or the acute infections, often produces striking results. In a small proportion of the cases strophanthus is to be preferred on account of its happier influence. In either case the remedy employed is to be discontinued, or the dosage greatly lessened, when the arrhythmia has disappeared. As I have stated elsewhere, many cases of pronounced arrhythmia will not yield to either of these remedies when but one is given; in such I have occasionally obtained good results from the combined use of digitalis and strophanthus. My personal experience warrants the statement that evidences of fatty degeneration and atheroma are not contraindications to the use of digitalis and strophanthus, but are signals for the observance of great reserve and caution in their use.

In extreme cases, such as sometimes occur in the course of acute infectious diseases, time is a paramount consideration, and here the cardiants should be administered hypodermically. Marked arrhythmia during the acme or height of this class of affections is ominous indeed, and presents an indication for prompt and energetic stimulation. Strychnine is here the best single agent, and may in some cases be

combined with digitalis. On the other hand, the arrhythmia that not uncommonly supervenes in the convalescent period of the acute infections is usually without dire significance, yielding promptly to cardiac stimulants and tonics, with the notable exception of diphtheria; in the latter disease it almost invariably leads to a fatal termination, despite the most strenuous efforts of the physician to bolster the heart. For the weak, stumbling heart, sometimes met in cases of influenza, which is often associated with arrhythmia, and rarely leads to heart-failure with fatal termination, strychnine, administered hypodermically (in doses little short of toxic), becomes a life-saving agent, and restores the rhythmic order to the heart's contractions. Camphor and caffeine also enjoy an enviable reputation in similar cases.

I have recently witnessed brilliant results in arrhythmia, after hemorrhages in typhoid fever, from the use of intravenous and subcutaneous injections of normal saline solution (strength .007 per cent.). Of this, from eight to twelve ounces may be employed, and repeated at intervals as occasion demands.

Cimicifuga Racemosa for Tinnitus Aurium.

For tinnitus aurium, not dependent on any disease of the ear (even though there be a collection of cerumen), Model and Robin (*La Médecine moderne*) employed successfully cimicifuga racemosa, which usually stopped the noise in the course of three days after the beginning of the treatment. The average dose was thirty drops *per diem;* it failed in cases that had lasted for over two years. The author considered the buzzing in the ear as due to a reaction of the auditory nerve, which is subjected to a direct or indirect irritation. Cimicifuga racemosa, which is known to act as an antispasmodic in labor, also as a diaphoretic and somnifacient, as well as an efficient remedy in pruritus, exerts an influence on the circulation of the ear and on the reflex irritability of the auditory nerve.—*Boston Medical and Surgical Journal.*

A RARE CARDIAC COMPLICATION OF INFLUENZA.[1]

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A great deal has been written upon the nature of the cardiac changes occurring during the attack and as a result of influenza. Careful reports have been made of several epidemics by very competent observers; but, until about the middle of this century, scarcely any mention was made of the circulation, except to say that the pulse was rapid and weak or at times relatively slow. No marked changes in the heart's action seem to have attracted attention. At that time Graves, in his "Clinical Lectures," called attention to these disturbances, and presented a very plausible explanation of their method of production. That his contemporaries were not familiar with these decided disturbances of the circulation, in this disease, is indicated by the fact that they, almost without exception, called attention to them by quoting Graves.

In the epidemics occurring between this period and that of the early nineties, there must have been little tendency towards cardiac complications, for the descriptions of the circulation in works written in this interval are about the same as those contained in the writings before the time of Graves's disclosure.

In the cases which have occurred in this country since 1890, numerous pathological cardiac and circulatory phenomena have been noted; some of a very serious and perplexing nature. Some very comprehensive publications have appeared, dealing solely with the cardiac and vascular affections occurring as complications or sequelæ of influenza, in which the possibility of such cases as I am about to report seems to be indicated; yet, in quite an extended search of the literature upon this subject, I have been able to find but one case which seems to have been of a similar character to the one which came under my direct observation. In only one of the modern text-books, and in none of the "Systems" of medicine, have I been able to find the probability or the possibility of the occurrence of such cases alluded to, and in this, the reference is so brief and indefinite as scarcely to make one expect such grave changes as I am about to record.

[1] Read before the Section on General Medicine, College of Physicians of Philadelphia.

The constraint induced by these facts led me to look into the literature bearing upon the cardiac phenomena occurring as complications or sequelæ of this disease; and, having found but one other allied case recorded, and that not exactly like my own, I have come to feel it my duty to present the facts in the case to this society. Because of the rarity of these cases I trust I may be allowed to present both cases in detail. The one occurring under my own observation is as follows:

Case I.—Thomas C., an Irishman, 43 years of age, and a sexton by occupation. Is a member of an unusually robust family. Grandparents, parents, aunts and uncles, and brothers and sisters likewise healthy and robust. No heart, kidney, or nervous diseases in the family.

With the exception of, possibly, the diseases of childhood, he never was sick until the present illness began. Has enjoyed exceptional health and strength. Has always been a man of temperate habits, and has never used tobacco. Is five feet ten inches in height, weighs 200 pounds, and is powerfully constructed.

January 1, 1895, while at his usual occupation, he said, he seemed to contract an unusually heavy cold. By evening he felt quite chilly and was decidedly feverish. In the night his fever ran quite high; he sneezed quite a good deal, felt sore in his breast, had a severe headache and considerable aching in his back and lower extremities; much more than he had ever experienced with any previous cold.

On the morning of the 2d I found him in bed, contented to remain, his eyes injected, nose running; with a slight cough, attended with soreness under the sternum; a severe headache, backache, pains in his legs, dry hot skin, face flushed, a temperature of 103⅖° F., pulse 100, respirations 26, an occasional dry râle over the lungs, and heart normal. He was given calomel followed by a saline; phenacetine and salol, two and a half grains each; liquid diet, and ordered to keep his bed. The next day at the same hour, he complained of but little headache and backache; his nose was still running, his cough much the same, his eyes and face less suffused, and his skin a little moist; temperature 101° F; pulse 96, soft and full; lung signs the same; heart not appreciably changed.

January 4 he complained of being weak and depressed and had been restless. His temperature was 102⅕° F., and the pulse 98, large and soft. Skin little moist. Eyes less suffused but nose much the same, except that the left nostril was almost closed by herpes, which also covered the greater part of his upper lip. Phenacetine and salol were stopped and salicylate of cinchonidia, three grains every three

hours, given. Râles in lungs growing moist; heart-sounds little less in intensity.

By this time I had concluded that he was having a moderate attack of influenza. Between January 4 and 9 there was but little change in the temperature, pulse, and respiration. Daily examinations of the heart and lungs were made. The case seemed to be pursuing a normal course, except that the herpes were very profuse and painful. On the 6th cinchonidia salicylate was reduced to every six hours, because of headache and little ringing in the ears.

January 9 he was free from aches or pains, but felt quite weak. His greatest distress seemed to come from the herpes. Had some purulent discharge from the nose and a little mucopurulent sputum. Temperature, 10 A.M., 99° F.; pulse, 80; respirations, 19. Urine, specific gravity, 1028, dark, acid, free from albumin and sugar.

January 10, same hour, temperature, 100⅖° F.; pulse, 52, large and moderate in strength. Skin was moist. He complained of feeling exhausted and was mentally depressed. The salicylate was discontinued, and quinine, two grains, strychnia sulphate, one-thirtieth grain, given every six hours in its stead.

January 11, 11 A.M., temperature 100⅘° F.; pulse, 62, large and soft, but regular in force and rhythm. Otherwise no change since previous day was apparent; but at 9.30 P.M. he became restless through pain and soreness on the inside of his right thigh and in the flexure of the knee of the same side, also from a sense of weight upon his chest and an indefinite distress in the precordia. His thigh and knee were not swollen, but were a little higher in temperature than the same portions of the left limb. Flexion of the right knee was very painful. He had no pain elsewhere, no headache, no dyspnea. Careful examination of the heart gave no evidence of disease. The sounds were slow, clear, and normal in character. There were still a few mucous râles scattered throughout the lungs. There was no evidence of disease of the pleura or pericardium. The left nostril and upper lip were covered with heavy crusts, due to the herpes, and caused our patient considerable discomfort. Mustard poultices were applied to the chest and tincture of iodine and cotton to the thigh and knee.

January 12: Condition not changed; treatment was continued.

January 13, 11 A.M., found him in much distress, there having been added to the pain and tenderness in his right thigh and knee dull aching in the left wrist, which, like the former, was attended with tenderness and elevation of temperature, but no swelling. The precordial distress had become more intense. There was no dyspnea. He did not ask to be elevated in bed, but wished frequently to be turned on his right side in order to relieve a sense of heat in the region

of the angle of the left scapula. His temperature at this hour was 100° F.; respirations, 19; and the pulse 38 per minute, full, of good force, irregular in rhythm, but not apparently so in force. The number and rhythm of the pulse were in exact keeping with the beats of the heart, and stethoscopic examination revealed no abnormal cardiac signs. At this point there was given, in addition to the quinine and strychnine, every six hours, carbonate of ammonia, five grains, every three hours.

At noon his condition was unchanged, except that the pulse-rate was 34 instead of 38 per minute. At 4 P.M. the temperature was 100⅘° F.; respirations, 18; and the pulse 32, large, rather strong, irregularly intermittent, but still recording faithfully each contraction of the heart. The cardiac sounds were still clear and distinct, both maintaining their normal character. There were no murmurs. The left wrist and the left hand at the metacarpo-phalangeal joints were hot, very tender, and exceedingly painful and also puffed, but not edematous. He complained much of pain in the region of the heart,—a dull, hot, aching sensation, which extended through to the angle of the scapula. This was an intensification of that which he had in the morning. It caused him to ask, frequently, to have his left shoulder raised that the sense of heat might possibly be lessened. Both this and the pain in the wrist and hand were very distressing, the subjective sensation being much like the pain produced by a scald. The patient said that both from the cardiac region and from the wrist and hand there seemed to be given off with each beat of his heart a wave of intense heat; and, referring to the wrist and hand especially, that they felt as he imagined they would had they just been taken from a mass of molten iron. He would have done anything to have saved a single heart-beat, so intense was the pain in these regions with each pulsation of that organ. The pain and tenderness remained in the lower extremity, but were scarcely noticed, because of the greater intensity of that just described. He lay absolutely motionless upon his back, afraid, almost, to breathe, for fear of intensifying his agonizing pain. There was evidently no dyspnea. Examination of the urine, passed in the morning, gave negative results. Whiskey was ordered, in addition to his quinine, strychnine, and carbonate of ammonia, in half-ounce doses, every three hours.

At 8 P.M. Dr. Roland G. Curtin was called in consultation, and found the case in the condition it was at 4 P.M. He expressed himself as convinced that it was a very unusual case, and that the man's condition was alarming. Together we made a careful count of the pulse, and found it 36 per minute, with an intermission of 52,—*i.e.*, had the beats —evidently dropped—occurred in the same regular time as those

which were registered, the number per minute would have been 88. The pulse was large and of good strength, irregular in rhythm, but not so in the force of its beats. It was dropping more than half its beats. At no time did there occur more than two beats in immediate succession. Generally two, frequently three, occasionally four and more rarely, only one beat was dropped. Allowing the perpendicular dashes to represent the recorded pulsations and the horizontal ones the ones which were dropped, the following diagram will give a fair idea of the irregularity of pulse in this case; II – – II – II – – – II – – I – – – II – II – – – II – – II. In place of whiskey and carbonate of ammonia, as ordered at previous visit, he was now given, caffeine, one-quarter grain, tincture of nux vomica, five drops, aromatic spirits of ammonia, one-half drachm, and whiskey sufficient to make two drachms, every two hours. Mustard was again applied to the chest.

January 14 he was seen four times, and at none of these visits could I discern any change for the better. His pulse remained very slow, was a little more feeble, but continued intermittent in much the same manner as on the previous day. At 10 A.M. his temperature was 99⅖° F.; respirations, 18; pulse, 34; at noon the same; at 4 P.M., temperature was 99⅘°; respirations, 18; pulse, 36; and at 9 P.M., temperature was 99⅖° and pulse 36. Caffeine, etc., was continued, and whiskey, tablespoonful every three hours, added.

January 15, 10 A.M., found him suffering less pain; that in the thigh and knee having practically disappeared. Pulse at this time was 35, large and softer; temperature was 99⅗° F.; respirations, 18. By 4 P.M. a great change had taken place in him. The pulse had gone up to 84, but was still dropping irregularly an occasional beat. It had grown smaller and much softer. The distress in left side of chest had greatly lessened, as had also that in the left wrist and hand. Heart-sounds, like the pulse, had only changed in intensity and rapidity, not in the character of its sounds. His skin was quite moist and his restlessness had greatly disappeared. At 9 P.M. his pulse had gone up to 96, was regular and weaker. His temperature was 99⅖°. During the night he was able to sleep.

January 16 found him much easier. Only soreness and stiffness remained in left knee, while the pain in the left wrist and in the chest was scarcely felt. Heat and puffiness had greatly lessened in the hand and wrist. Temperature was 99⅕° F.; pulse, 98 and regular, smaller, and still a little more feeble. Caffeine, etc., was reduced to every four hours instead of every two.

January 17: Temperature was 98⅘° F. at 10 A.M., and the pulse 98 and regular. Pain was gone and soreness rapidly disappearing. He was able to sleep several consecutive hours during the night. Skin

was quite relaxed during sleep and a little so at time of my visit. He improved in strength during the day, was able to turn himself in bed, with but a rise of five or six beats in his pulse. Temperature in the evening was 99⅘°, and pulse 96. Caffeine, ammonia, nux vomica, and whiskey were stopped, and small doses of quinine and strychnine substituted for them.

From this time on he steadily improved. His convalescence was brief and uninterrupted. In this, as in the nature of his complications, he surprised us. There was no return, even in the slightest degree, of the cardiac pain and distress, or of the pain in the extremities. The tenderness in the latter disappeared in a few days, and left but little stiffness in their wake. The pulse from day to day was found regular, stronger, and slower, until it reached 72 per minute. Finding that turning and rising in bed did not disturb it more than is usual in a slightly exhausted patient, I allowed him to get out of bed on the 23d of January. By the 26th he was walking about the house, and rapidly taking up his normal habits as to meals, etc. Repeated examinations of the heart failed at any time to give the slightest physical sign of disease of that organ, unless we choose to consider the very slow irregular pulse as due to morbid changes in the heart itself. The herpes labialis were troubling him when all other symptoms had disappeared, and was, without doubt, a marked example of this affection. I continued to see him every week for one month, but found him in one month feeling very well, almost in his best of strength, with a pulse beating soundly at 68 per minute. He tells me he has not had the least difficulty in breathing or any other evidence of disturbance of health since, and yet has been working hard upon a farm for the past four years.

The second case, occurring in the practice of Dr. Isaac Hull Platt,[1] Lakewood, New Jersey, is as follows:

Case II.—"Miss G., a maiden lady of about 25, came under my observation three or four years ago, with symptoms referred to the heart.

"She suffered at times from palpitation, partial attacks of syncope and vertigo, and dyspnea upon exertion. She was also the victim of a moderate degree of indigestion. There was no history of rheumatism. A soft, blowing, systolic, mitral murmur at first suggested mitral regurgitation, although there was no interference with the normal sounds; but this was eventually excluded, by the absence of any accentuation of the pulmonary second sound, by absence of hypertrophy, and by the subsequent history of the case. The murmur was then attributed to slight roughening of the leaflets of the mitral valve.

This diagnosis was recently confirmed by Dr. Henry Conkling, of Brooklyn.

"Under tonic treatment, with regulation of the digestive function, the symptoms disappeared, though the murmur continued. The patient was always, however, decidedly neurotic.

"About December 27, 1891, she was attacked with influenza of a mild type. December 31, pneumonia developed of the lobular character, usual in influenza. It ran a moderate course, and cleared up satisfactorily in about a week. Instead, however, of convalescence proceeding as was hoped, the pneumonia was followed by extreme prostration, and for the next few days she grew steadily weaker, and on January 10 her condition appeared almost hopeless. Stimulation was pushed to the greatest degree, including hypodermics of camphor. To this she responded fairly well and rallied slightly, but on the following day the threatened heart-failure was repeated. Again there was response to heroic stimulation. During this time the pulse had been weak, and varying from 92 to 110.

"On the evening of the 11th, the day of the second collapse, the pulse at 7.45 P.M. was 102, weak and small. Fifteen minutes later the pulse was observed to be 58, larger, but weak and soft. The collapse occurred about an hour later, the pulse continuing slow. It continued slow, with the soft, large character, until about noon of the following day, when it suddenly changed from 52 to 104, then, during the afternoon, rose to 110, then gradually fell to 96, and at 5 P.M. suddenly changed to 48. During this time the patient had been growing stronger, and the character of the pulse in both phases had improved. For several days the patient continued to gain slightly and slowly.

"Naturally the peculiar action of the pulse was the subject of close attention, and as it continued for eleven days it gave us ample opportunities for observation. On several occasions we were able to observe the change from the rapid to the slow action, and *vice versa*, with our fingers on the pulse. On one occasion the transition occurred, back and forth, three or four times in a minute. It would occur in this wise: The pulsation being 100 to the minute and regular, a beat would drop out, then, after a few beats, another, and after a shorter interval a third, and so on at lessening intervals until we had under our fingers a regular pulse of 50, larger and softer than the former. After a longer or shorter time, sometimes only a few seconds, the process would be reversed, intermediate beats falling into their proper places, until the original pulse-rate was restored. The heart-sounds corresponded to the pulse-beats. At no time was there heard any third heart-sound, as of ineffectual systole, when the pulse failed to record the contraction, though such a phenomenon was closely watched for; nor, when

the slow pulse-rate was fully established, was there any suggestion of a minor pulsation between two major ones, though this sometimes occurred during the transition. In these respects the phenomenon differed from the description of pulsus bigeminus, though I cannot but regard it as of the same character.

"This condition of things continued, as I have said, for eleven days, or until January 22. During this period occurred the most profound collapse of all. On the afternoon of the 14th menstruation commenced, about ten days in advance of the proper time. During the night the patient suffered from excessive vomiting and sank rapidly. A hypodermic of camphor brought some slight response, but she again relapsed, and early in the afternoon of the 15th was apparently *in articulo mortis*. The skin was livid, the extremities cold to the shoulders and hips; the pulse imperceptible and the heart-sounds nearly so; the countenance hippocratic. Stimulants were administered hypodermically, by the rectum, and by the skin by means of hot cloths soaked in hot alcohol. And again, after some hours, the patient rallied. During this time the pulse (when it could be perceived at all) had maintained its slow character, from 40 to 50, and so continued till about the next noon, when it changed to 92, and continued to vibrate, back and forth, as before.

"From this time the patient gained, and, as she gained, the peculiar character of the pulse gradually disappeared, the slow pulse appeared less frequently and lasted a shorter time. On January 22 the beats fell from 96 to 48, increased to 52, then jumped to 104, and this was the end of the sudden transitions. On February 1 the patient sat up in bed. She gradually gained in strength, and is now about as well as before the attack, though she says she becomes tired a little more easily. The cardiac signs are as before the attack, except that the murmur is less loud."

The points common to the two cases are: The peculiar cardiac disturbance occurred, in both, during an attack of influenza and after the disease had about run its course; in both the pulse was very slow; in both adequate changes in the heart itself could not be detected which would account for the great slowing and the rapid changes in the pulse; in both there were found no attempts at systole, on auscultation of the heart, in the long intervals between pulse-beats; in both the return of the circulation to the condition it was in before the influenza came on was much more rapid than is customary in cases where inflammatory lesions of the heart and cardiac nerves are known to occur.

The points of dissimilarity are: In Case I the pulse-rate descended to 32, while in Case II it reached but 40 to 45; in Case I there was de-

cided arrhythmia, continuing through the entire period occupied by the slow pulse, while in Case II it occurred only while the pulse was in transmission from normal rate to that which it took in the attacks, —*e.g.*, from 104 to 52 or from 96 to 48; Case I dropped more than half its pulse- and heart-beats and was irregularly intermittent, while Case II dropped just half its beats and was regularly intermittent; in Case I there was one long attack of bradycardia, taking five or six hours to make the changes from and to normal, while in Case II there were several attacks of it, the transition from and back to normal taking hours, minutes, or only a few seconds.

While in my search of the literature I could find but the one other case, I am convinced that others have seen quite similar cases, for R. Douglas Powell,[2] London, Eng., writing in the *British Medical Journal*, says: "In cases of influenza I have known the pulse slowed down to 45 or 32, but more usually to between 50 and 60; and it has commenced within a few days of the termination of the fever. The heart-sounds are feeble, with prolonged pause; the pulse soft and compressible, as a rule. The normal heart's action, as a rule, is resumed within a fortnight or so, but I have observed the slow, languid pulse, with languid peripheral circulation and mental fatigue, continue for several months. The pulse has been permanently lowered after fever."

Julius Althaus,[3] London, 1892, speaks of "Cardiac Crisis" occurring in influenza. The pulse, he says, "may be exceedingly rapid, small, and almost imperceptible, or slow, irregular, and intermittent."

Edmund A. Parkes,[4] London, 1868, remarks: "At first strong and quick, the pulse soon becomes soft, and, in the latter stages, feeble and even slow. It is often singularly changeable within a few hours."

Zuelzer,[5] in Ziemssen's "Encyclopedia," says: "The pulse exhibits a varying character; it may be full and moderately accelerated (90 to 100), but is also described as small and weak. It is not infrequently found irregular and very changeable, so that it is often completely changed in from six to eight hours."

Graves [6] seems to have been the first to describe these cases of marked slowness of the pulse, and spoke especially of the fact that there is often a complete change from rapid to very slow, occurring within a few hours.

He considered these phenomena the result of the action of the influenza poison upon the vagus, and was led to believe this by the occurrence also of "a peculiar kind of dyspnea, which is not justified or explained by any stethoscopic signs." He expressed the conviction that both the cardiac and the respiratory crises of influenza are

due to an affection of the cardiac and respiratory centres in the medulla.

Althaus has recognized cardiac, respiratory, and gastric crises in influenza, and believes them all due to the action of the grippe-toxin upon the pneumogastric centres rather than the nerve-trunks. He speaks also of a peculiar bronchitis, occurring in grippe, which is rapidly developed, and is accompanied by a peculiar pain under the sternum and a difficulty of breathing, all out of proportion to the physical signs.

Zuelzer says: "Many patients show more or less important evidences of dyspnea which, according to Graves's view, sometimes occur with intermittent or rhythmically recurring remissions. In many cases they are probably the consequence of complications, but sometimes no demonstrable lesions can be found in the lungs. Graves assumes a disturbance of the function of the vagus to explain such cases; Biermer is satisfied that they depend upon congestions of the lungs which furnish few indications to auscultation or percussion unless edema occurs. With many patients these phenomena go on to great oppression, marked dyspnea, pain in the precordia, etc. Pleuritic stitches, too, and pains under the sternum are observed without any appreciable signs."

Parkes also says: "Dyspnea is often considerable, and is dependent either upon the great congestion of the respiratory tract or pneumonic complications, or possibly, as suggested by Graves, on some special implication of the vagus. There are often intermissions in the dyspnea not accounted for by stethoscopic signs. Occasionally there is orthopnea and suffocative attacks; sometimes there is an intense and oppressive feeling across the chest."

Powell[2] believes these cases (referring to the cardiac crises) to have, "in all probability, two sources of origin,—(1) neuritis of the cardiac nerves, probably within the heart; (2) by a partial inhibition of the cardiac muscle by a morbid condition; an undue acidity."

William Osler[7] says: "To involvement of the nerves may be ascribed some of the common cardiac symptoms, such as persistent irregularity, tachycardia, bradycardia, and attacks of angina pectoris."

Platt, in commenting upon his case (Case II of this paper), says he is inclined towards the belief that the centre, and not the cardiac nerves, is the part affected.

Curtin and Watson,[8] speaking of the cardiac disturbances which occur in influenza, say: "The generally accepted views in regard to the innervation of the heart do not prevent the supposition or hypothesis that both rapid and slow action may be produced by either excitation or partial interruption of the function of the pneumogastrics.

These nerves are also concerned in ordinary angina, hence we may suspect that the poison of the disease may act as an irritant, stimulant, or sedative to this nerve, or that the nerve itself may by inflammatory changes, due to its actual invasion by the diseased process, be partially cut off from the general distribution; a partial imperfect section, a paresis produced by disorganization. In such cases, especially if both nerves be affected, death probably occurs, preceded by irregular and tumultuous action for a few moments; while in other cases, from the evanescent symptoms, we must either conjecture that the function of the nerve is affected temporarily, or that the pathological changes are so slight in character that a return to healthy action may be easy and rapid.

"The sympathetic and vasomotor system may also play an important part in some, as it is supposed to do in many cases of ordinary angina; indeed, some cases we have recorded seemed to be wholly or almost wholly due to this, as where flushing or blueness occurred paroxysmally without manifest cardiac disturbance.

"Whether the irritation of the nerves was direct or reflex, whether the cardiac ganglia and the inhibitory ganglia of the heart itself were affected, are questions for further inquiry; the latter query arose after studying the cases where synchronous action was lost, or the condition known as arrhythmia."

It will have been observed, from the foregoing quotations, that the almost unanimous opinion of those who have had knowledge of these cases is that the peculiar cardiac disturbances are due to affection of the pneumogastrics; the opinions being about equally divided as to which portion, centre or periphery, is acted upon by the grippe-toxin. But two of the writers quoted have ascribed them to "neuritis," while the others prefer the more cautious and indefinite expression, "affection of."

In the absence of post-mortem investigation of such cases we must be content to surmise what the nature of the lesion is, just as we must also be in rheumatic fever (inflammatory rheumatism), and mumps, where we see an apparent inflammation attended with pain and disturbance of function, disappear quite as rapidly and with as little after-effect at the seat of disturbance, as has been observed in the class of cases we have under consideration.

Therapeutic tests might enable us to determine which portion of the vagus is involved. For instance, atropine, in full physiologic doses, should it cause the bradycardia to disappear, would be quite strong proof that the peripheral ends of the pneumogastrics were the portions affected.

I regret that I did not try atropine in my case, for I was strongly

inclined towards the belief that the cardiac disturbance in this was due to an irritation of the pneumogastric endings in the heart muscle. This opinion is based principally upon the fact that there was in this case marked arrhythmia and an unusual amount of pain and distress in the region of the heart.

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Bronchial Asthma.

Professor von Noorden advises for the treatment of bronchial asthma the revival of Trousseau's method, which consists in the employment of atropine. Treatment must continue for four to six weeks, beginning with one-sixtieth of a grain and increasing the dose every two or three days till we reach one-tenth of a grain per dose, after which the dosage is gradually diminished. Although no toxic effects have ever been observed while thus employing the drug, still the physician is cautioned to exercise great care while it is being administered. Atropine may not probably influence an individual attack; it is, however, sure to prevent the occurrence of any for some time to come; and if not cured entirely, the patient will still obtain lasting improvement, in cases, of course, in which the disease is not as yet complicated by pulmonary emphysema, nor by a chronic bronchial catarrh.—*Boston Medical and Surgical Reporter.*

NOTES ON A CASE OF PRIMARY CARCINOMA OF THE TONSIL.[1]

By Joseph S. Gibb, M.D.,

PHILADELPHIA.

Malignant disease of the tonsil is of sufficient rarity to make of every case interesting study.

Of all the malignant diseases affecting this body carcinoma is the most infrequent. And of all the tissues of the body the tonsil is the most infrequently involved in primary carcinoma. Gürlt's tables show the tonsil involved primarily in one case out of 11,131 cases of carcinoma; Lennox Brown has seen one case of carcinoma of the tonsil in every 5000 throat cases. Mackenzie reports seven cases in his wide experience. And so, all statistics go to prove the exceeding infrequency of the disease.

It is seldom the opportunity offers to study a case from the very incipiency and throughout the whole course of the disease. Such having been the privilege of the writer, in the case herein reported, it was thought the few lessons gained from such study might be of sufficient interest to report. The history of the case is as follows:

Case.—C. K., aged 53 years, born in Ireland of healthy parents, had never been very sick. He came to the Episcopal Hospital the middle of August, 1897, for the treatment of a sore throat, which had lasted about two weeks. The soreness was confined to the right side of the throat, was constant, and but slightly aggravated by deglutition. The tonsil of the right side was enlarged and very much reddened; several open crypts were observed on the surface.

The case was regarded as lacunar tonsillitis by those in charge of the clinic during my absence from the city, and was treated by astringent applications.

The case came under my direct observation, for the first time, about September 7. His chief complaint was a severe lancinating pain in the right tonsil, extending up to the ear of the same side. In appearance he was fairly well nourished and rugged. His appetite was good, and, aside from the throat-trouble, seemed in all respects healthy.

Examination of the fauces showed the right tonsil enlarged and

[1] Read at a meeting of the Section on Otology and Laryngology, of the College of Physicians of Philadelphia, January 3, 1899.

very markedly reddened, the crypts open, and some filled with inspissated secretion, presenting a picture not unlike lacunar tonsillitis. However, the nature of the disease was suspected for two reasons: (1) The localized character of the morbid process; (2) the severe, almost pathognomonic, pain in throat and ear.

In consequence of our suspicions of the nature of the disease a close watch was kept of the case.

He presented himself at the clinic regularly twice weekly, so that an opportunity was afforded to carefully study every feature of the case.

About the middle of September the tonsil began to assume an appearance which removed the possibility of a simple inflammatory affection. A new growth made its appearance at the superior portion of the tonsil, which, though continuous with and evidently a part of the tonsil, could readily be distinguished from the tissues of the latter organ by its paler color and tendency to bleed when touched. Even at this early date the surface of the new growth showed ulceration. The submaxillary and sublingual glands and the cervical lymphatics were all enlarged and indurated.

With these conditions existing there was no longer any doubt as to the malignant nature of the disease. Dr. Richard H. Harte was asked to see the case as to the advisability of a radical operation. After careful examination, in which the diagnosis was confirmed, he deemed operation inadvisable.

By the middle of October (about two months from the initial symptoms) the growth had spread in a cauliflower manner over the tonsil and the mucous membrane, covering the ramus of the jaw and immediately back of the last molar tooth. In consequence of the edema from this latter involvement the jaw became difficult to open. Now for the first the appetite failed and loss of flesh became evident.

About the 1st of November the growth extended onto the soft palate, causing increased difficulty in deglutition, and another annoying symptom,—viz., the accumulation of viscid mucus in the pharynx.

Very soon after this date (November 1) a nodule was discovered on the dorsum of the tongue well back towards its base. This, of course, added still more to the difficulty of deglutition, etc.

Coincident with the extension of the growth within the oral cavity, there was marked and rapid enlargement of the salivary and lymphatic glands in the neck, so that the head became fixed and movement painful.

The chief complaint of the patient at this time was of these enlarged lymphatics and the pain in the ear.

From this time (November 1) the growth extended in all direc-

tions from the original site,—viz., upon the tongue, on the ramus of jaw, and the alveolar process of the lower jaw, and more extensively in the salivary and lymphatic glands.

The oral involvement was kept in abeyance for a time by the treatment instituted, and which will be detailed later on. The glandular condition grew progressively worse.

He continued his visits to the clinic until July, at which time the entire fauces, the dorsum of the tongue, and the angle of the jaw were covered by the growth.

The neck was a mass of hypertrophied glands, and indurated tissues from the clavicle below to the mastoid process above, presenting a large, red, fluctuating mass.

The hypertrophied and broken-down cervical glands ulcerated about the middle of July, discharging a large quantity of thin curdy pus. The tissues around the point of ulceration rapidly broke down, leaving several large ulcerating openings, discharging pus and broken-down tissues. The odor was horribly offensive and most difficult to remove.

The further history of the case is that of continued ulceration, and the consequent exhaustion until death took place, August 14, 1898, about one year from the first appearance of the disease in the tonsil.

For the following notes of the autopsy and sections of the growth I am indebted to Drs. Thomas and Currie:

Autopsy.

Chas. K., aged 54 years, laborer. Autopsy made August 15, 1898, twenty-four hours after death.

The body is that of a much emaciated man, about 50 years of age. Cadaveric rigidity has entirely disappeared.

On the right side of the neck there is a tumor about the size of a man's fist, extending from the tip of the mastoid process above to the fifth cervical spinous process below, and from the angle of the jaw in front to the border of the trapezius behind.

The surface of the tumor shows three spots of ulceration. These vary in size from that of a quarter- to that of a half-dollar. The growth seems to have originated in the right faucial tonsil. It involves the pillars of the tonsil, the right lateral and posterior wall of the pharynx. The nasopharynx and basilar process of the occipital are free. The right side of the tongue from the base forward, for one and a quarter inches, is the seat of an infiltration, directly continuous with the tumor. Part of this mass has apparently been scooped out.

The angle of the right mandible feels softened and thickened from

pressure of the growth, and has the appearance of a rarefying osteitis. The cervical vertebræ are not involved. No chancre or scar on penis.

Thorax.—Some recent pleural adhesions over both lungs.

The *left lung* is crepitant. Posterior aspect of lower lobe shows hypostatic congestion. A calcified tubercle found at apex and the lung throughout studded with nodules the size of a pea. To the eye they presented all the characteristics of tubercles. (A number of them were sectioned and the microscope confirmed their tubercular nature.)

Right lung shows almost entire absence of crepitus. Upper and middle lobes are firmly adherent,—old and well-organized pleuritic adhesions. The greater portion of middle lobe feels quite solid, but does not sink in water.

Heart normal.

Increased amount of fat in anterior mediastinum.

Kidneys showed some degree of arteriosclerosis, but not marked. Slight fatty changes in cortex.

Liver practically normal. The remaining viscera were normal. The appendix was completely obliterated at the proximal end.

Sections from growth showed it to be a *carcinoma.* Where it had infiltrated the tongue the muscular fibres were pushed aside and in many instances had lost their striations, and were hyaline degenerated. Many of the epithelial cells were dropsical and swollen. Numerous cell-nests were seen. At the periphery the cells were cuboidal, while the centre usually showed a more or less homogeneous mass of degenerated cells. The connective-tissue stroma of the tongue, in this region, was the seat of a pronounced round-cell infiltration.

Sections of *nodules of lung* proved them to be tubercles.

Various sections cut from both lungs failed to find metastases.

Sections of *heart, liver,* and *kidneys* were practically normal. A moderate degree of arteriosclerosis was present. In the heart and liver there was slight fatty infiltration.

Sections of *spleen* and *pancreas* were normal.

Both *suprarenals* were sectioned and found normal.

Prostate and *thyroid* normal.

No metastases were found. No evidences of syphilis were found.

Fat in anterior mediastinum sectioned and found negative.

This, in brief, is a history of the case from the very incipiency to the close of the malady.

The etiology, as in all cases of carcinoma, is involved in obscurity.

In consequence of the rather limited intelligence of the patient no satisfactory history of his antecedents could be obtained, so that we were unable to bring the element of heredity into the case to help us

in the search for cause. Nor could any history of local irritation, either in his occupation or habits, be obtained to serve as an exciting cause.

There seemed to be no observable cause, the disease developed in the same manner as an ordinary non-malignant affection, and in the early stages was practically indistinguishable, so far as local appearances go, from the latter.

As to diagnosis: In the very early stages it was impossible to differentiate this from the more frequent inflammatory conditions.

The unilateral nature of the disease, the persistent pain in the ear, the unusual amount of thickening and redness, with the persistence of all the symptoms, soon placed it out of the inflammatory class of cases, and excited suspicion of its nature.

Of all the symptoms presented, perhaps the most significant in cases of cancer of the throat is that of persistent ear-pain. It is true, all diseases of a destructive and ulcerative character in the pharynx may be accompanied by ear-pain. Still all the other ulcerative affections—*e.g.*, tuberculosis, syphilis, or lupus—are accompanied by such unmistakable local and general symptoms as to render the diagnosis easy, and hence this symptom remains, if not pathognomonic, of great significance.

So persistent is the ear-pain as in many cases to constitute the chief source of complaint.

It is interesting, in this connection, to note the case of Delavan, in which ear-pain was so pronounced that for several weeks before the true nature of the disease was suspected and the throat examined, the patient was treated for ear-disease.

Fortunately, the locality is easily accessible, and the diagnosis need not remain long in doubt. It is a simple matter to remove a piece of the new growth and submit it to microscopic examination, which will at once reveal its true nature.

There are details in the treatment of this case which have been of much interest to me, and may not be uninteresting to the section. As may be imagined, cases of this nature are trying and difficult to manage. Hopeless from the beginning, our aim is to make the patient as comfortable as possible.

I believe a measure of comfort was obtained by the treatment in the case reported, though the onward progress of the disease towards its inevitable termination was not stayed.

When it became evident that no radical measure was possible, we determined to remove all visible evidences of disease in the pharynx, hoping thereby to render the life of the unhappy sufferer more tolerant. In this endeavor we were successful.

At an early stage (*i.e.*, about October 1), when the growth was confined to the tonsil, the mass was grasped by a stout forceps, and it and the tonsil were pulled from their bed; a stout wire was thrown around the entire mass, and this was heated by the current and slowly shortened until the encircled mass was severed. By this means nearly, if not quite, all the growth was removed, almost painlessly and without hemorrhage.

The relief to the symptoms was marked,—two or three weeks of comparative comfort following the operation.

Thus, from time to time, as the growths reappeared, they were snared off, or if difficulty was met with by this means the galvano-cautery knife was used. Each operation was followed by a relief to the urgent symptoms, and undoubtedly the progress of the disease in the oral cavity was held in check. The glandular involvement, however, remained unchecked, and later became the more prominent feature of the case.

A time came, however, when the jaw became so fixed and immovable that it was not possible to introduce an instrument, even a tongue-depressor, into the mouth. Then, of course, all local treatment was abandoned, and recourse was had to opiates until death closed the scene.

Formaldehyde as a Disinfectant.

Brough believes that we have in formaldehyde the best practical gaseous surface disinfectant known. For dwelling-house disinfection it is unsurpassed. It is easy of application, and does no injury to goods. It is not ideal, its use being limited to surface disinfection. Its penetrative powers under ordinary conditions are so slight as to be almost valueless. Good results are best obtained by using a large body of gas, and having the room as tightly sealed as possible. Length of exposure and the influence of temperature are secondary to the amount used.

Under these conditions disinfection may be regarded as complete after the use of formaldehyde.—*Boston Medical and Surgical Journal.*

MEMORANDA.

LOCOMOTOR ATAXIA OF TRAUMATIC ORIGIN.

The following report of an interesting set of symptoms, occurring in a patient under my care for locomotor ataxia, of traumatic origin, is quite unique, on account of the disturbance to some of the special senses, and, what is more, its asymmetry. I exhibited this patient before the Knox County Medical Society in May, 1898.

C. W. D., white; travelling shoe-salesman; aged 37 years; of good family history and personal history, was perfectly sound and in robust health till five years ago (1893), when he fell, a distance of twenty-seven feet, through an elevator shaft, striking on his rump. This gave him a severe jar in the upper part of his trunk. He recovered in two and one-half months with a slight back-weakness.

On May 26, 1897, a hack, in which he was riding (with two large shoe-trunks, such as are used by drummers), was turned over, throwing him out. The entire weight of the hack and trunks fell on him, striking him on the back and hips. When removed from under the wreck he complained of great pain in his back and left lower extremity. His left lower extremity felt heavy. Since then he has been gradually growing worse. On August 1 (of same year) he noticed the back of the left thigh, the back, and the outside of the left leg, the top, outside, and bottom of the left foot feeling dead. In December, 1897, I operated for coccygeal fistula, from which he recovered. This fistula was evidently traumatic in origin.

Symptoms.—The pains in his left lower limb are quite severe at times, and tend to grow worse. They are more common at night. During the pains he complains of a burning sensation—the size of a pint-cup—over the left buttock.

Ocular Symptoms.—While recovering from the operation for the coccygeal fistula, he complained for a few days of double vision. The Argyll-Robertson pupil is present; also the pupils are small.

Loss of Knee-Jerk.—This is present and has been from the beginning.

Ataxic Stage; Motor Symptoms.—The ataxia developed early. The Romberg symptom soon being manifest. He has the characteristic ataxic gait. He walks with a stick. The eyes are cast down.

The body leans forward. The legs are wide apart, and the left lower limb inclines to evert. There is also inco-ordination of the left upper extremity, as can be seen when, with closed eyes, he attempts to touch the tip of his nose.

Sensory Symptoms.—Over the entire left side of the body—as far as the median line, both in front and behind, over the inner and back of left arm as far as the elbow—there is anesthesia and analgesia, with confusion of temperature sense. He cannot distinguish heat from cold. These same symptoms extend over the left buttock, back of left thigh, back and outer side of left leg, outer side of dorsum and sole of left foot. Besides, there is complete hemianesthesia and hemianalgesia of the left side of his penis and scrotum.

Reflexes.—As stated above, the knee-jerk is absent.

Special Senses.—Eye-symptoms (as indicated by double vision) have not been present since the operation for the coccygeal fistula. He is developing considerable deafness, more marked on the left side. There is no disturbance of the sense of smell.

Visceral Symptoms.—The tabetic crises, affecting the larynx, stomach, urethra, and rectum are present. He has had a number of attacks of dyspnea. The gastric crisis is common. He has great pain during a stool. During urination there is hesitancy in making water, —vesical stammering. There is no retention of urine nor constipation. The sexual power is lost.

Trophic Changes.—The nails on the toes of his left foot are altered; they are very brittle.

There are no cerebral symptoms or paralysis.

Treatment.—So far treatment has had little or no effect in arresting the progress of the disease or ameliorating the symptoms.

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A CASE OF OMPHALORRHAGIA.

Mrs. ——, a V-para, was delivered of a male child, weighing eight pounds, by an easy and natural labor lasting five hours.

There is no specific trouble in either parent, nor was there any reason to suspect sepsis, hemophilia, or acute fatty degeneration in the infant. Icterus was present at birth, becoming more marked by the third day, when the entire skin surface, conjunctiva, stools, and urine

were deeply stained. After the fifth day the jaundice rapidly disappeared, and the infant showed evidence of being well nourished.

The umbilical cord separated on the sixth day, the resulting cicatrix being perfect.

On the tenth day the nurse called attention to a small blood-stain on the infant's binder. Investigation failed to reveal any bleeding points, but there was free oozing from an apparently healthy umbilicus.

Tannic acid, in powder, was applied under firm pressure. This failed to check the oozing, and Monsel's solution was then freely used after thorough cleansing of the parts.

This resulted in perceptible decrease of the hemorrhage, and, after several applications, the hemorrhage ceased entirely for six hours. A firm clot had formed under the bandage, and the case looked encouraging, since but little blood had been lost. At this time the infant, in urinating, wetted the binder and clot, and the oozing began again.

The pin-and-ligature operation was suggested, but declined, and the parents wished a consultation. Accordingly another physician saw the case with me. As I had given a fatal prognosis, his suggestions were followed according to the following method: Small circles were cut from muslin, beginning with a diameter of one-half inch, the diameter was increased to two inches. These disks were laid one on top of the other until a cone-shaped compress was formed. The Monsel solution was removed and the cone compress was applied, with the apex inward, under firm pressure by bandage. The hemorrhage at once became profuse, and death followed.

"Winckel found one case (omphalorrhagia) in 5000 births, male children being attacked more frequently than females, and strong healthy children more frequently than the feeble" ("American Text-Book of Obstetrics").

There was no edema of ankles or hands at any time, and no ecchymosis. There was no vomiting, except regurgitation from over-nursing, and no colic. There was no cyanosis or marked somnolence. No post-mortem examination was allowed.

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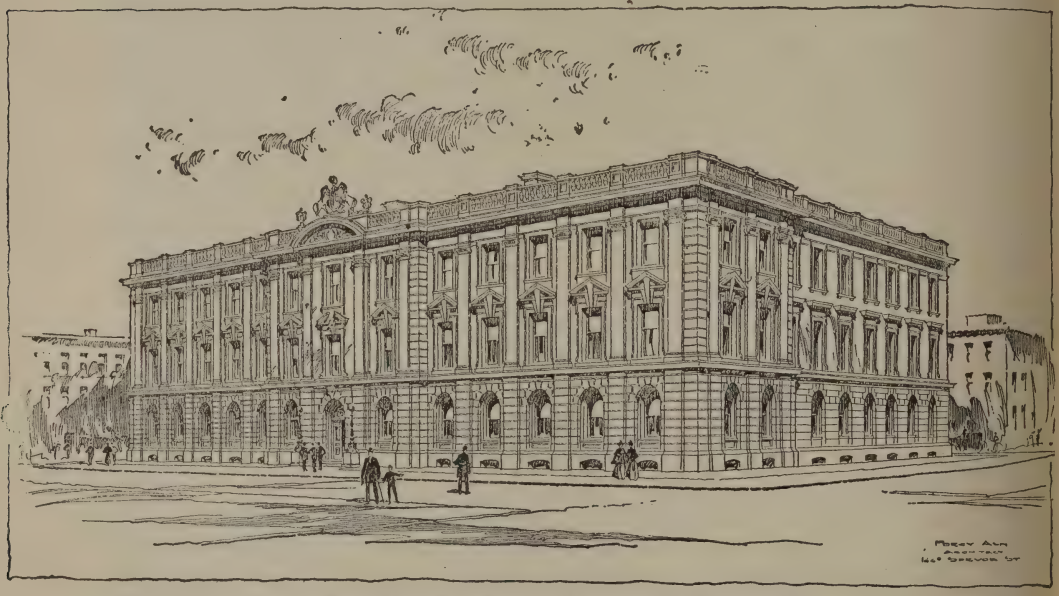
ALUMNI NOTES.

New Medical Laboratories at the University of Pennsylvania.

There has been a great deal of agitation in the past about higher medical education, and the theme may seem to have been worn threadbare. With the establishment of the compulsory four years' course of study the ends of the agitators were for a time achieved, and the higher medical education sought after in the past was attained. More years and longer terms of study, with increased practical instruction, completed and rounded out the medical curriculum. To attain this end an additional year of study was urgently necessary, and new clinical facilities had to be established; in short, provision was required to give the student more ample practical experience than had been possible before.

But the world moves swiftly, and another higher medical education has made its appearance. It is true that with the present provisions the University offers a course of study complete in its details, covering the required branches, and covering them far better than ever before, but the foundation of the structure is too narrow, the building is too high for the breadth of base, and the equilibrium is uncertain. The needs of the present time are: more thorough training of the student in the fundamental branches, a greater devotion to laboratory work, and a weeding out of much of the old-fashioned didactic teaching. The handwriting is plainly written on the wall: the laboratory in the future shall be the medium of education, and institutions shall be judged by their laboratory equipment. There was a time, unfortunately not so many years ago, when medical schools in this country graduated doctors of medicine whose whole teaching had been theoretical, on account of the lack of hospital facilities. In those days the stamp by which a medical school could best be measured was the kind and amount of hospital facilities it offered the student. While the importance of hospital training and bedside instruction is as great as ever, a change of ground has taken place, and laboratory training has become more and more necessary. It is no longer the crucial question whether a certain school offers its students practical instruction, as well as didactic lectures; the decisive

test is rather, whether laboratory training is commensurate with the other forms of teaching. It is impossible to teach chemistry in didactic lectures, or even by class demonstrations. This has long been recognized. It is equally impossible to teach anatomy, pathology, histology, or physiology by didactic lectures, or demonstrations to large classes of students. Individual work is as absolutely essential in these branches at the present time as it has been in the case of chemistry for many years. The scientific physician of to-day recognizes the all-importance of laboratory study of his case, and will naturally send his students to that institution which offers the most thorough preparation in these branches.



New Medical Laboratories at the University of Pennsylvania.

It must not be thought that the University has been entirely remiss. The growing necessity of this form of instruction has been recognized and temporary provision has been made. The physiological laboratory has for several years been conducted upon the principle that each student should receive individual instruction in practical work, using instruments of precision at least sufficiently to attain some command of this sort of work. In histology, in pathology, and in experimental therapeutics the laboratory facilities have been sufficient up to recent years, while in bacteriology the ample equipment of the Department of Hygiene has been called in requisition. The continued growth of the classes, however, and the increasing importance

of laboratory instruction, make a departure absolutely imperative, and a new laboratory building will have to be provided in the very near future.

The alumni will recognize this need, and will undoubtedly endorse its immediate consideration with unanimous vote. The Provost, with characteristic energy, has undertaken the task of securing the means necessary to build and equip new laboratories; and naturally, as in the case of the Law School, turns at once to the alumni of the department. Every alumnus of the Medical School should be reached, and every loyal alumnus will undoubtedly give some amount to this fund. The cost of the building and equipment will be very great; no less than $300,000 will be required for the building and preliminary equipments; and it is urgently hoped that a large part of this fund will be secured by contributions from the alumni. Already the Provost has assurances of liberal contributions from alumni in Philadelphia, and from others living in remote sections of the country, whose interest in the Alma Mater has not been diminished by their distance from Philadelphia; and wherever an alumnus may be, the mere mention of this project should be received by him as an urgent appeal.

The University of Pennsylvania has ever been the first in suggestion, in preparation, and in execution, looking to the elevation of the tone of medical education in this country; and it is confidently hoped that this latest departure will receive the warmest support from those who in the past have derived so much from the advanced standing of the institution in their student days.

The accompanying plans will illustrate far better than words the character and scope of the proposed undertaking. The building has three floors, devoted to physiology, pharmacology and pathology respectively. The main part of the laboratory building is 192 feet in length, and there are wings running back at each end 128 feet. Large student-laboratories are placed in the wings, while the front of the main building is divided into a number of special research-rooms, offices, and work-rooms of various sorts. To the rear of the centre of the main building there is on each floor a special demonstration-room, a lecture-room arranged in the form of an amphitheatre. The animal-house is a special building two stories high, and situated at the open side of the hollow square formed by the main building and the two wings.

University War Memorial.

At the meeting of the Houston Club on Saturday it was decided to raise funds for the erection of a tower at Thirty-seventh and Spruce Streets, to cost $60,000, and to be a memorial to University of Penn-

sylvania men who went to the front in the war with Spain. A resolution was adopted requesting the Provost to suggest a committee on this war memorial, and a committee was authorized to collect subscriptions for the erection of a tablet in Houston Hall to the memory of the late John B. Scott. The funds for the war memorial will be raised among the undergraduates and alumni.

Summary of Students and Officers of Instruction.

The summaries of the officers of instruction and students of the University, as they will appear in the catalogue of 1898–99, are as follows:

Officers of Instruction.

The College	106
Department of Philosophy	55
" " Law	14
" " Medicine	91
Laboratory of Hygiene	3
Department of Dentistry	39
" " Veterinary Medicine	18
Emeritus professors	5
	331
Duplications	73
Total	258

Students.

The College—	
School of Arts	365
Towne Scientific School	284
Courses for Teachers	277
Department of Philosophy	158
" " Law	320
" " Medicine	835
Laboratory of Hygiene	19
Department of Dentistry	502
" " Veterinary Medicine	50
	2810
Duplications	20
Total	2790

The Oration on Washington's Birthday.

Hon. Seth Low, president of Columbia University, has accepted the invitation of the trustees of the University of Pennsylvania to deliver the oration before the University in the Academy of Music February 22, 1899.

Annual Meeting of the New York Alumni Association.

The annual meeting of the New York Alumni Association of the University of Pennsylvania was held at the Waldorf-Astoria, on Saturday evening, January 21, 1899. In the afternoon the combined musical clubs of the University of Pennsylvania gave a concert, which was attended by no less than 1000 listeners, who applauded the college musicians with sincere appreciation.

In the evening about seventy-five alumni and their guests, the members of the musical clubs, attended the banquet at a business meeting, held before the dinner, the following officers were elected: President, William B. Boulton, '79; vice-president, W. H. Patterson, '76; secretary, Robert C. Hill, '89; treasurer, C. A. Griscom, Jr., '87. The guests of honor were Mr. Charles C. Harrison, Provost, and Dr. John A. Marshall, Dean, of the Medical Faculty. The musical clubs were grouped around little tables at one end of the hall and rendered selections galore. Provost Harrison, in his speech, told of the good work the University had done during the recent war, and then said: "The University now has a greater landed estate than has any other university in the heart of a great city. We own fifty-four acres within ten minutes' walk of the City Hall, and I shall be very much surprised if the city of Philadelphia does not add to this before long by transferring to the University of Pennsylvania the entire almshouse property. I expect that in a few years no university in the country will have the opportunity that we shall have." He declared that it would be the greatest centre for the study of law in the United States. He spoke also of the value of the historical records which had followed the excavations of the ancient city of Nephrites by Pennsylvania graduates. The University, he said, had taken on a new life and energy that bespoke a glorious future career. He referred to what William B. Boulton had done for the University.

"The University Library," said the speaker, "was recently increased by 21,000 volumes,—not books purchased pell-mell, but well and judiciously selected, and at this minute University of Pennsylvania men are working in far-off Asia to uncover to the world the oldest cities of the universe.

"The Class of '76 informs me to-night that it intends to erect a

dormitory for the University, but only on the condition that they alone be permitted to sleep in it."

After the Provost's closing remarks, consisting of good wishes for the future of the University, there was a clatter of glasses and a number of hearty "Here's to Harrison."

Dr. Marshall dwelt on the age of the Medical School and its inadequacy for present purposes. "We need funds to build laboratories, to carry on research work in physiology and ethnology. A movement should be inaugurated with that end in view. The present tendency is less didactic and more practical work. More endowments like that given us by Mr. Paine are needed."

To illustrate the difference between the extent of a class in the '60s and that of to-day, Major Rogers enumerated by name the twenty-five members of his own class, which for a man of his age was certainly quite a feat of memory. The speaker then related how the students drilled during the Civil War in a corps of their own, fifty or sixty strong, and when they failed to attain the necessary amount of efficiency how they joined the City Troop and other Philadelphia organizations.

Mr. Louis C. Madeira was then asked to respond to the toast "The Modern Hercules," and spoke on the athletic deeds and feats of the University of Pennsylvania. The announcement that a football game would be played on November 4 with Harvard at Philadelphia, and that arrangements had been perfected with Cornell and Columbia for boat-races, was hailed with shouts of "Hurrah!"

Mr. Madeira closed by paying a tribute to the valorous deeds of the University of Pennsylvania men in the late war. "Captain William P. Biddle, '72, was at Manilla; University of Pennsylvania men were with Roosevelt at San Juan, and," he said, "they were the best men he had in the regiment; our men were at Ponce and San Juan, and in every battle the University of Pennsylvania was well represented. Descendants of the Cadwaladers of 1760 and the Hopkinsons of 1757 are now attending the University of Pennsylvania. Let all University of Pennsylvania men send their sons to their own alma mater."

To a vote of thanks for the musical entertainment, proposed by President Boulton, the banjoists and vocalists responded with three rousing cheers. Dr. Thomas Dunn English, author of "Ben Bolt," of the Class of '37, for the first time in many years, was absent from the alumni dinner, but in his absence Mr. T. Hedding sang in the doctor's honor "Ben Bolt."

Necrology.

Robert S. McCombs died in Philadelphia, on January 18, 1899. Dr. McCombs was born in Philadelphia, November 23, 1848. He re-

ceived his medical degree in 1868, when he graduated from the University of Pennsylvania. For two years after graduation he was employed as physician by the Buck Mountain Coal Company in Carbon County, but returned to his native city to associate himself with Dr. Robert C. Shelmerdine. In 1875 Dr. McCombs received the degree of Doctor of Philosophy from the University of Pennsylvania. At the time of his death he was surgeon in the employ of the Union Traction Company, of Philadelphia, and a trustee of Dickinson College.

Dr. Charles F. Guillou died in New York January 2, 1899. Dr. Guillou was born in Philadelphia July 26, 1813, and was graduated from the University in 1836. He served in the Mexican War, and was afterwards appointed surgeon of the United States ship "Columbia," going on an extended cruise in Asiatic waters on her. He was afterwards assigned to the United States frigate "Constitution," and, when on one of her cruises in European waters, the vessel touched at Gaeta, Italy, Dr. Guillou went with the American consul and the captain of the "Constitution" to visit King Ferdinand II and Pope Pius IX. These personages visited the "Constitution" the next day, when the Pope was taken ill and was attended by Dr. Guillou.

Dr. Guillou, on his return home, was detailed to the Brooklyn Navy-Yard, from which service he resigned in 1854, to assume charge of a hospital in Honolulu. While in the Hawaiian Islands he also served as Italian consul by special appointment of Victor Emanuel. He remained in Honolulu until 1867.

Dr. T. William Birkey died in Philadelphia on January 10, 1899. He studied medicine at the University of Pennsylvania and was graduated in 1851.

Dr. John T. Carpenter died in Pottsville, Pa., on January 22, 1899. He was a graduate of the Class of '52, Department of Arts, and the Class of '55, Medical Department, of the University of Pennsylvania. He served as a surgeon during the Civil War, under General McCook, in West Virginia. During 1862–63 he was medical director in charge of the Department of Ohio, and was president of the Army Medical Board for the department. He continued in charge of the hospitals at Covington, Ky., and other points in the West until 1864. He was successively president of the County Medical Society and the State Medical Society, and was a Fellow of the American Academy of Medicine and a member of the American Medical Association.

EDITORIAL.

THE TREATMENT OF TETANUS BY INTRACEREBRAL INJECTIONS OF ANTITOXIN.

Interest in the treatment of tetanus was very much stimulated by the announcement, some years ago, of the discovery of the tetanus bacillus, which has been shown to be the specific cause of the disease. Considerable hope was placed in the use of the tetanus antitoxin, administered hypodermatically or intravenously, but the results were largely disappointing. It was generally supposed that the rapid development of the disease resulted in such a profound intoxication of the patient by the time the symptoms were recognized that the administration of the antitoxin came too late.

Of extreme interest in this connection are the researches of Roux and Borrel. In order to understand the conclusions of these investigators certain facts must be borne in mind. The tetanus bacillus remains localized in the part of the body to which it has been introduced. It does not invade other parts. In its development, however, certain extremely poisonous substances are produced, known as the tetanus toxin. This toxin is absorbed into the blood and thus reaches all parts of the body. It seems to have been shown experimentally that the tetanus toxin possesses a special affinity for the cells of the cerebrospinal axis, where it is deposited from the blood and becomes fixed; and further, that the antitoxin remains in the blood where it is effective in neutralizing the toxin, but it is powerless to destroy that which has been deposited in the nerve-cells.

Wassermann demonstrated that a mixture of tetanus toxin with the brain or spinal cord of a susceptible animal could be injected in a guinea-pig subcutaneously without causing tetanus, while the same quantity of toxin without the admixture of brain or cord invariably produced tetanus that ended fatally.

These facts seemed to explain to Roux and Borrel the large percentage of failures in the treatment of tetanus by the subcutaneous and intravenous use of the antitoxin,—that is, the antitoxin circulating in the blood failed to destroy the toxin which had become fixed in the brain-cells. Accordingly, they treated forty-five guinea-pigs, in which tetanus had been produced, by the intracerebral injections of the

serum, and thirty-five recovered. Of seventeen other animals treated by the subcutaneous use of the antitoxin in much larger doses only two lived. Seventeen tetanized animals which received no antitoxin all died.

Naturally some hesitation was felt in employing this method in man, on account of the possibility of doing harm; but as the disease is so fatal in itself, it seemed justifiable to take this risk. The first case so treated was that of Chauffard and Quénu (*Presse médicale*, No. 5, 1898). Cases have since been recorded by Garnier (*Ibid.*, No. 70, 1898), Ombrédanne (*Ibid.*, September 3, 1898), Bacaloglu (*Gazette des Hôpitaux*, No. 70, 1898), Robert (*Presse médicale*, No. 70, 1898), Delmas (*Ibid.*, September 17, 1898), Heckel and Reynès (*Ibid.*, September 7, 1898), Du Hamel (*Médecine moderne*, August 10, 1898), Hue (*Journal des Practiciens*, November 19, 1898), Church (*New York Medical Journal*, December 17, 1898), Robinson (reported by Rambaud, *Ibid.*), Johnson (reported by Rambaud, *Ibid.*), and Semple (*British Medical Journal*, January 7, 1899).

Of these thirteen cases six recovered (those of Chauffard and Quénu, Garnier, Ombrédanne, Du Hamel, Church, and Semple) and seven died. One case (that of Robinson) died eleven days after the total disappearance of tetanic symptoms, apparently of acute nephritis, of toxic origin. The patient had been subjected to a celiotomy, and developed the first symptoms of tetanus ten days subsequent to the operation.

It is, of course, impossible to state what the mortality of this series of cases would have been with any other treatment. The following mortality percentages are taken from Agnew: Frederick and Curling, 52 per cent.; Cowling, 44 per cent.; Guy's Hospital, 84.2 per cent.; Glasgow Hospital, 87.5 per cent.; Pennsylvania Hospital (Philadelphia, 1873–77), 84 per cent.; St. George's Hospital (1865–79), 75 per cent.; St. Bartholomew's Hospital, 82.5 per cent.; St. Thomas's Hospital, 79.16 per cent. The mortality is generally conceded to vary with the time at which symptoms first develop, after the receipt of an injury. Those beginning from a few days to ten days or two weeks after inoculation with the tetanus bacillus are more fatal than those beginning at a later period than two weeks. On this point Agnew gives the following figures: Of 196 cases beginning within two weeks after the injury, 62.5 per cent. died; of eighty-one cases developing between the fourteenth and twenty-first days, 17 per cent. died; and seventeen cases occurring from the twenty-first to the forty-fourth days, also gave a mortality of 17 per cent. It is further stated that in the cases beginning in the first seventy-two hours after injury the recoveries exceeded the deaths in the proportion of 14 to 11. This observation

is at variance with the views expressed by most writers on the subject, and must have been based upon a small and particularly fortunate series of cases. It is usually stated that this class of cases invariably terminate fatally. The statistics given are not as recent as could be desired, but it is probable that if brought up to date would be essentially the same. There have been too few cases treated with the antitoxin to base definite conclusions upon, but, as already stated, the early hopes reposed in this method have not been realized.

The mortality of the cases treated by the intracerebral injections of antitoxin is about 52 per cent. Without entering into a detailed review of the cases, it may be stated that a study of the reports seems to indicate that they represent an average run of an equal number of examples of the disease. The proportion of deaths, while higher than that given by Cowling's collection of cases, is much lower than the mean of all statistics. Whether the next series of an equal or greater number of cases will show results as good, time alone can determine.

Success in the intracerebral treatment of tetanus is said to depend upon the use of the antitoxic serum at the earliest possible moment,—that is, as soon as a diagnosis is possible. The details of this method are, briefly, as follows: The anterior portion of the head is shaved, and prepared in the usual manner for an aseptic operation. The injection is to be made into the frontal lobe as no important functions are thereby endangered. Church gives the following measurements as a guide in applying the trephine: Two and a half inches (six and a half centimetres) above the external angular process of the orbit and one and three-quarters inches (four centimetres) from the median line (or four centimetres above the frontal eminence and four centimetres from the median line). Semple gives the following rule: An imaginary line is taken over the head from one external auditory meatus to the other. Another line is taken from the base of the nose to cross the first line at right angles on the top of the head, and a third line from the outer angle of the orbit to where the first two lines cross each other. The centre of the last line is the seat of operation. The incision in the scalp may be horseshoe-shaped or linear, one-half to three-fourths of an inch in length. An Archimedean drill or a suitable trephine is employed to make a very small opening through the skull. The needle attached to the syringe containing the antitoxin is then introduced into the brain to the depth of about two inches, and the serum discharged drop by drop, so that it may be absorbed, and not lacerate the brain as would result by the rapid introduction of a large quantity. About two and one-half centimetres of double strength serum are thus to be injected into each frontal lobe, about ten minutes being allowed for each injection. The needle is attached to the syringe

by about three inches of rubber tubing, in this way any movement accidentally made by the syringe is not communicated to the needle. Rambaud has further provided against the possibility of injury to the brain by unnecessary motion of the needle, by having the head of the latter accurately to fit the trephine opening; in this way the needle is immovably fixed. The syringe should be provided with a "screw" piston, inasmuch as the serum can thus be delivered much more slowly and the danger of applying too much force is thus removed. Semple recommends the use of a round-pointed needle, which would tend to push aside blood-vessels and pass them, while a sharp point would lacerate them.

The antitoxin recommended for use in the intracerebral treatment of tetanus is known as "double strength." That is, ten cubic centimetres of the antitetanic serum are evaporated to dryness, and the resulting "dried antitoxin" preserved in sterile, hermetically sealed bottles. When required for use, the contents of one bottle are dissolved in five cubic centimetres of sterile water, care being observed to avoid contamination. This quantity is administered at one time,—one-half in either frontal lobe.

In addition to the intracerebral injection, twenty cubic centimetres of antitoxin should be administered subcutaneously or intravenously daily for a few days. The object of this is to neutralize any tetanus toxin that may be circulating in the blood, and thus prevent any further poisoning of the nervous system.

It does not seem possible, at this time, to give a judicial opinion upon the intracerebral treatment of tetanus. If the method can be employed without adding to the dangers of patient's suffering with tetanus, and this appears to be established, then it is certainly deserving of further trial. There is, in the opinion of the writer, an apparent theoretic fallacy in the arguments of Roux and Borrel, and those who adopted their conclusions, which is this: If the tetanus poison be fixed in the cells of the cerebro-spinal axis, but causes death especially by its presence in the brain, how can the serum introduced into the frontal lobes affect remote portions of the organ, where there is presumably just as much poison? It seems reasonable to suppose that the serum injected would permeate the brain-tissue to a limited extent in all directions, and that any excess beyond what could be held locally would reach the general circulation through the lymphatic channels. However, as stated, this is theoretic, and should not be allowed to weigh against practical results, or even to prevent proper experimentation.

The conclusions of Heckel and Reynès may be quoted as expressing the latest views on the subject. Cases of tetanus must be grouped

into several classes as far as prognosis is concerned. First, those whose incubation is fourteen days or more, with a temperature below 39° C., with but little dyspnea, will generally be cured by serum therapy. In subacute cases, running a rapid course, with dyspnea, irregular pulse, Roux's method will usually be followed by good results, if employed before the irregularity of the pulse and frequency of the spasms become too pronounced.

In acute cases, beginning in five to seven days, with a temperature over 40° C. with rapid appearance of the spasms, oliguria, hurried breathing, and rapid pulse-rate, serum therapy is to be recommended, if used immediately upon the appearance of the trismus. In fulminating cases, which develop within twenty-four hours, all therapy is powerless. The cases of internal infection, such as puerperal tetanus, tetanus neonatorum, and the cephalic tetanus of Rose, are not favorable cases for treatment. The first essential towards successful treatment is an early diagnosis. At the moment when trismus appears, the disease is not in the beginning, but it has already passed through its various phases. It then becomes a question of saturating the brain with the antitoxic serum. The great desideratum is to discover a symptom by means of which a diagnosis may be made before trismus sets in.

A New Hot Water-Bottle.

The expensiveness and want of durability in the ordinary rubber bottles and ice-bags which have been so essential in the sick chamber have long been a perplexing problem. Experiment with rice paper, covered inside and out with a coating of Japanese lacquer, led Professor Jacobsohn to recommend this material to the Berlin Society of Internal Medicine as far superior to rubber. In strength, flexibility, imperviousness, lightness, and durability it is said that this bottle leaves little to be desired.—*New York Medical Journal.*

MEDICAL PROGRESS.

MEDICINE.

UNDER THE CHARGE OF

JAMES TYSON, M.D.,

ASSISTED BY

M. HOWARD FUSSELL, M.D., AND A. O. J. KELLY, M.D.

Treatment of Tetanus by Means of Intracerebral Injections of Antitoxin.

Rambaud (*New York Medical Journal*, December 17, 1898) reports a number of cases of tetanus treated abroad and in America by the above method. He quotes from an article by Roux and Borrel these facts: That when a portion of the brain-substance of a guinea-pig is crushed with some tetanic toxin and centrifugated, this fact, that the upper layer of the liquid contains very little toxin, the lower layer, which is nervous substance, holds the tetanic poison.

By experimenting on animals they found that when the toxin was injected directly into the brain of guinea-pigs, the dose required to cause tetanus was much smaller than when a subcutaneous injection was made. They also found that rabbits, immunized against tetanus and resisted the hypodermic injection of several times the mortal dose of toxin, succumbed after having received in the brain the dose, which, if introduced into the thigh of a fresh rabbit, would not even have caused local symptoms. "He concludes from these symptoms that the tetanic antitoxin, when injected into animals, remains in the blood, whereas the toxin is extracted from it and fixed by the nerve-cells. The antidote does not come in contact with the poison, and the two substances, though so near each other, fail to meet. The serum is efficacious against the toxin which is placed under the skin, because the greater part of it enters the blood, but it proves powerless against the poison that has already reached the nervous elements."

They concluded from these experiments that, to cure a case of tetanus, the antitoxin must be placed where the toxin is acting, in order to preserve the vital portions of the cord before they are affected.

They accordingly treated with intracerebral injections of antitoxin a number of guinea-pigs which had been tetanized, and the great majority of them recovered.

After these excellent results in animals, it remains to try the treatment in man. It might be objected that the risks incurred are numerous, but since it is the only chance the patient has, he should receive the benefit of it.

Really, however, the risks are trivial. If the intracerebral injection is made in a neutral area, such as the forepart of the frontal lobes, the results of the trauma are minimized; the injury caused by the fine hypodermic needle is

trifling, the quantity of serum injected is small, and being introduced slowly, no undue compression is caused; the hemorrhage from the dura and pia is easily avoided; the button of bone removed being preferably small, healing of the bone takes place rapidly, and no subsequent adhesions leading to compression are likely to occur.

Besides the intracerebral injection, it is necessary to continue to give antitoxin intravenously or subcutaneously for a few days. In this manner the toxin in circulation with the blood, together with that which continues to be secreted at the site of injury, is thereby neutralized, and therefore cannot affect the nervous centres.

So far there have been reported nine cases of tetanus treated abroad in this manner and three treated in America; of these, four of the foreign cases and two of the American cases recovered. The author remarks that in all of the fatal cases the cause of the disease was extremely rapid and severe, the infecting germs were in every case very virulent, and the nervous centres became rapidly involved. In three cases death occurred within fifteen hours following the operation,—that is, before the serum could have had time to take effect. In one fatal case death occurred forty-one hours after operation, but in that case the infection had taken place through many small wounds, and was caused by a germ living in horse-manure.

In every fatal case autopsy showed that the cerebral lesion caused by the injection was trifling, and in no way could have caused the serious cerebral symptoms.

The injections into the brain are made through a long hypodermic needle, having a heel, conical in shape, which fits into the trephine-hole. This needle is connected with syringe by means of a piece of rubber tubing. The syringe itself is made with a threaded piston-rod which moves in the barrel by a screwing motion of the thumb-piece. In this way the injection can be given drop by drop.

Semple (*British Medical Journal*, January 7, 1899) gives a history of this treatment much as given in the above case.

He also relates a case which recovered under the treatment. He has not heard, however, of the device for holding the needle steady while the liquid is being injected.

The Treatment of Pneumonia in Children.

The following abstracts are made from the discussion held in the section of Pediatrics of the New York Academy of Medicine, November 10, 1898, and printed in the *Medical News*, November 19, 1898.

Chapin, in the management of the fever of pneumonia, says that it is quite possible that a certain grade of fever may have a beneficial action when it accompanies the reaction of the tissues to infective and inflammatory irritation. It is also a clinical fact that children, as a rule, stand high temperature well. When this is the case it is folly to upset the stomach by drugs, or weaken the heart by antipyretics in combating a temperature that is not doing any great harm. In such a case the treatment may do more harm than the symptom against which it is directed. There are times, however, when high temperature calls for special treatment. Some children bear high temperatures well; others very poorly. In the latter, interference is promptly called for, and the indication for treatment is not so much the exact degree of temperature as a dis-

turbance which is being caused by fever. In one case the temperature of 102° to 103° F. may require special treatment, in another one the fever needs no special treatment until 104° or 105° is reached. High temperature may result in extreme cerebral irritation, causing restlessness, or even convulsions; in others, stupor and even coma. The heart becomes weak and rapid; the respiration becomes rapid; digestion and assimilation always suffer more or less. It has been shown by experience that control of the high fever gives a certain measure of relief to these symptoms.

In croupous pneumonia the indications for interference in hyperpyrexia are not so important as in bronchopneumonia, as the former runs a short course and tends to recover. The first point in the management of fever is to avoid any measures that will leave a bad effect, and thus hinder the future chances of recovery. All depressing remedies come under this head: as the coal-tar derivatives. The application of water is, on the whole, the safest and the most satisfactory method of controlling dangerous hyperpyrexia. Much may be accomplished by a thorough application of cold to the head. This not only reduces the temperature, but relieves to a certain extent its bad effect upon the brain and nervous system. In order to be effectual it must be applied continuously and thoroughly.

Finely cracked ice placed in bladders, from which the surplus air is expelled, may be moulded around the head, especially at the vertex and occiput. If this does not suffice, compresses should be applied directly to the chest. The child is stripped, wrapped in a blanket, and placed on a table; a stimulant is given and the feet are placed in contact with hot bottles. A compress sufficiently large to surround the chest is plunged into water from 70° to 95° F. and applied to the chest. This is changed every fifteen or twenty minutes. If this does not cause a reduction of temperature the temperature of the water can be lowered. The addition of about one-fourth part of alcohol seems to heighten its effect. The author invariably employs the tub, on account of the fright to the child and the exhaustion which it causes. In cases of cyanotic children, he has used a warm bath of 100° with friction of the surface.

The treatment of pneumonia in very young children by Holt is summed up as follows:

(1) No depleting measures are ever admissible.

(2) Hygienic treatment, including fresh air, proper feeding, and intelligent care, is of the utmost importance.

(3) No unnecessary medication should be permitted.

(4) Many annoying symptoms may be relieved by local treatment, such as the cough by inhalations, pain by counter-irritation, restlessness by the ice-cap or sponging.

(5) Stimulants should be deferred until demanded by the condition of the pulse.

(6) High temperature is much more safely and effectively controlled by the use of cold than by drugs.

(7) Greater caution is necessary in the use of powerful stimulants than is generally observed.

(8) Rest is quite as important as in other serious diseases.

Koplik, in a paper on the same subject, says that we must remember that acute primary broncho- or lobar-pneumonia in infants and young children is an infectious disease, and the lines of treatment will be largely influenced by this fact. Certain cases have subnormal temperatures with exceedingly rapid

heart, and in these we must sustain the heart with digitalis or with strophanthus. It must be given in half-minimum doses, frequently repeated, until the result is attained. Strychnine in doses of one-four-hundredth grain, given hypodermically, is a very useful drug.

In acute heart-failure the main relief must be placed on hypodermics of alcohol and ether, first the latter, then the former. Poultices are valueless; opium is badly borne in asthenic cases. The high temperature often requires active interference, and baths are, perhaps, the best general treatment.

All baths should never be given when the temperature is starting on the decline. He thinks that very small doses of antipyretics are readily borne and useful. In cases where the heart is well sustained it is useless and harmful to use alcohol. The patient should be isolated from other children. Ventilation, the constant change of air, is necessary. The temperature of the sick-room should be from 65° to 70° F.

Long Remissions in Epilepsy and their Bearing on Prognosis.

Wharton Sinkler (*Journal of Nervous and Mental Diseases*, August 1898) has quoted twenty-four cases of idiopathic epilepsy in which there have been remissions varying from two years to twenty-nine years, the longest remission being twenty-nine years. This case was a male, aged 38 years, who had convulsions while teething, which continued until he was 8 years old. This disappeared until he was 35 years old, when they reappeared, and continued at short intervals.

After considering the case which he details he says we are forced to the conclusion that it is not justifiable to consider any case of epilepsy cured, no matter how great has been the interval of freedom from attacks and appearance of normal health. Notwithstanding this unfavorable conclusion, the study of these cases brings out a fact which is satisfactory, for it shows that remissions of many years' duration may occur, in which the patient is in normal health and is able to pursue his vocation, as if he had never suffered from epilepsy.

The Cause of so-called Phosphorus Necrosis of the Jaw in Match-Workers.

Stockman (*British Medical Journal*, January 7, 1899) says the disease begins in a carious tooth, or in the socket of one which has been extracted. Its progress may be slow or rapid. When rapid, the gum becomes red, tense, swollen, an abscess develops, which contains fetid pus; an ulcer forms, which lays bare the bone; the bone becomes necrosed. In favorable cases the bone can be removed, when new bone forms.

Pathology.—There is a chronic osteitis and periostitis. It has been held that this is due to a specific action of the phosphorus. The author believes, however, that it is due to an infection from micro-organisms. He examined the pus from six such cases and found various organisms, none of which could be said to be specific. He also found *tubercle bacilli* in every case. Further, when death occurs, it is usually due to tuberculosis of the lungs. Early operative treatment is the only means by which a permanent cure may be effected.

He therefore believes that the condition is really a tuberculosis of the bone, engrafted upon a primary lesion, caused by the corrosive action of the phosphorus.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

ASSISTED BY

CHARLES H. FRAZIER, M.D., AND GEORGE M. PURVES, M.D.

Remarks on Resection of the Gasserian Ganglion.

W. W. Keen, M.D., and Wm. G. Spiller, M.D. (*American Journal of the Medical Sciences,* November, 1898). The paper gives the report of eleven operations on the Gasserian ganglion, ten of these were secondary operations. The Hartley-Krause method was employed in all the cases named. Of the eleven, three died, one from direct infection, the other two from shock.

All the cases had been affected for quite a number of years; all except one had undergone peripheral operations. The two greatest difficulties experienced during and after the operation were excessive hemorrhage, either when lifting up the flat or else from tearing at the foramen spinosum of the middle meningeal artery. The other difficulty was a resulting corneal ulcer on the side of operation, with at times more destructive involvement.

The ganglia, which were removed, were examined microscopically by Dr. Wm. G. Spiller, who found,—

(1) The medullary substance of the nerve-fibres within the ganglion and its branches is much swollen, atrophied, or has entirely disappeared.

(2) That the axis-cylinders are markedly degenerated or else entirely destroyed.

(3) That the cells of the ganglion itself are degenerated or atrophied to such an extent that there is no ganglionic tissue in certain parts of the field.

(4) The blood-vessels are distinctly sclerotic.

(5) There is in one case a decided increase in the amount of connective tissue of the ganglion, which is enough to be called a distinct sclerosis.

Four points as regards operation in such cases are considered:

(1) Should the Gasserian ganglion be removed?

(2) The answer being in the affirmative, to what extent shall it be removed, —that is, shall we remove the entire ganglion or only its outer two-thirds, or should it simply be "broke" up by blunt instruments?

(3) Should the ganglion be removed as a primary operation, or should it be left as a very last resort for tic douloureux?

(4) Points in regard to technique.

(1) The answer to the first depends in large measure to the answer of three questions:

(*a*) The mortality of the operation. This has been determined to be about 22.2 per cent. This alone would lead the author to leave the operation as a last resort; and this percentage of death answering positively the third point as given above.

(*b*) The history of the cases as to cure is in general that, as a result of experience, in over 100 cases of intracranial operations on the fifth that pain will return in not over 1 or 2 per cent., and with no such severity as to liken it to the original disease.

(*c*) Apart from mortality, the chief danger lies in the loss of vision, if not of the eyeball. This has been obviated by the stitching of the eyelids together at the close of the operation, and after three or four days to remove them and place a Butler shield over the eye.

(2) Shall the ganglion be removed entirely? As the only objection to removing the whole ganglion—the effect on the eye—which can now be overcome by technique, the removal of the entire ganglion should be aimed at.

(3) In answer to the third-named question, he belives that the removal of the ganglion should only be undertaken when you are driven to such an extreme operation.

(4) Points in regard to technique.

(*a*) Access to the cranial cavity be made by means of the Hartley-Krause operation or that of Doyen. All these approach the ganglion from the side, and by lifting the temporo-sphenoidal lobe.

(*b*) Hemorrhage from the middle meningeal has almost always taken place either by unavoidable tearing of the vessel in turning down the flap or by tearing of the vessel at the foramen spinosum.

(*c*) Removal of the ganglion is best done by Krause's method, of uncovering it, and then seizing and twisting it out after division of the second and third divisions at their foramina.

Dr. Spiller concludes the paper with the belief that neuralgia cannot be sharply distinguished from neuritis, and in some cases of so-called neuralgia (chronic), such as obstinate sciatica, I believe that the microscope will show evidences of chronic inflammation.

If it could be shown that the sensory root of the Gasserian ganglion did not unite after division of its fibres we would have a fact of great importance, since division of this root would probably be a less serious operation than removal of the entire ganglion.

Tetany and Tetanoid Spasms, associated with Gastric Dilatation, treated Surgically.

A. W. Mayo Robson (*Lancet*, November 26, 1898) remarks that it does not seem to be generally noticed that severe muscular spasms of a tetanoid character, possibly allied to or even an early stage of true tetany, are frequently associated with gastric dilatation. These spasms of a more or less severe type were frequently noticed to be attendant upon gastric dilatation, and which he has come to look upon as a very frequent concomitant of the disease.

The transition between gastric tetany, strictly so called, tetany with gastro-intestinal symptoms, and ordinary tetany would seem to be a gradual one, if it is admitted with Dr. Trevelyan that the term gastric tetany includes the milder as well as the severer cases.

The prognosis of tetany occurring in this condition is a serious one,—the mortality being 75 per cent.

Three cases are cited in which operation was performed for gastric dilatation, associated with severe muscular spasms.

In all the cases there was marked gastric dilatation, frequent vomiting, emaciation, and muscular cramps to a greater or less degree. The diagnosis in each case was a cicatricial contraction of the pylorus.

In two of the above cases, at the time of operation, marked stricture of the

pylorus was found. In the other case the pylorus was adherent to the gall-bladder, liver, and abdominal wall in such a way so as to form a distinct tumor.

Pyloroplasty was performed in all three cases with an uninterrupted recovery, not only from the operation but also from the recurrence of any muscular spasm, or of the other symptoms due to the dilatation.

In the first case cited, it was noticed that the exacerbations of the tetanic state were always associated with a painful wave of contraction going across the stomach until it reached the pylorus, when the abdominal pain would become intense, and the tetanic cramps in the other muscles come on, or if they were present they would be increased in severity.

In another case the spasms affected the muscular system to such an extent as to suggest the possibility of strychnine-poisoning.

Concluding, the paper states that the cause of tetany is a double one:

(1) Due to absorption of some poison from the dilated stomach, which increases the excitability of the nervous system.

(2) It is a reflex effect produced by the painful contraction of the pylorus.

The author has never met a case where such spasms were associated with simple dilatation or in that following a carcinoma of pylorus, etc.

The Union of Wounds.

Thomas Pickering Pick (*Lancet*, December 10, 1898) writes as to whether the union of wounds is a purely constructive physiological procedure or whether they unite by a process of inflammation; he believing that they always heal by the last method,—that is, by the pathological process of inflammation.

In support of which belief he deals with four questions and their answers,—namely:

(1) Whether the dilatation of the blood-vessels occurring in the process of union is a mechanical one, due to the increased pressure exerted on the capillaries of the part, or no?

Passing by the explanation that such dilatation is caused by the mechanical obstruction, which would account for the condition of "determination," which term he would limit to mean a sudden increase required for some physiological purpose, and also excluding the nervous inhibitory influence upon the muscular coats of the vessel walls as unsatisfactory and only partial, he concludes that this dilatation is caused by the direct effect produced upon the vessels of the part of the injury producing the disturbance,—in other words, that the irritation disturbs directly the function of the muscular coat of the arteries and veins, and the living cell-substance of the capillary walls.

(2) Is the accumulation of cells in and around the wound the outcome of a physiological process?

That this infiltration of cells around the wound is the direct outcome of stasis in the vessels and that this stasis is a necessary consequence of their deterioration or retrograde metamorphosis which can scarcely be regarded as physiological.

(3) Are the changes which take place in the cells exactly identical with the mode of growth and development in embryonic cells?

It is, perhaps, acknowledged that the cells of granulation tissue are exactly identical and behave in the same manner, undergoing the same form of development into higher tissues as embryonic cells. The recognition of this fact has caused objections to be raised against the inflammatory adhesions of

wounds; but it should be the origin of the cells and not their consequent changes which would mark the process of the union of wounds as an inflammatory one.

(4) What is the nature of the newly formed tissue?

In answer to this question the author finds one of the strongest proofs in favor of his view. In considering the character of newly formed scar-tissue, he says that it is far from being an "ideally high quality of connective tissue;" that it is more dense than ordinary alveolar tissue containing no yellow elastic fibres; has no papillæ, no sweat-glands, or hair-follicles, no lymph-spaces or lymphatics, and that nerve-fibres are few in number or altogether wanting.

Moreover, it is very prone to undergo degeneration or to become the seat of epithelioma or of keloid growth, which must be regarded as a disease of degeneration.

If, then, this is the character of scar-tissue, it can scarcely be regarded as the product of a healthy physiological process, and it becomes an argument in favor of the view that union of wounds is an inflammatory and, therefore, a pathological process, and not a physiological one.

The manner of division of wounds he would simplify into two classes,—namely, without and with suppuration.

He finds the usual first division of the manner of healing of wounds—that is, by immediate union—primary adhesion or the direct growing together of the severed surfaces as entirely untenable, from the fact that if a microscopic section is taken from a wound, no matter how small, there will always be found a greater or less amount of connective tissue between the edges of the wound.

Under the head of modes of union of wounds without suppuration he would place union by first intention, and, as he believes, union by scabbing is but a modification of this, it would also be included. Union by blood-clot, as it can only take place in an aseptic wound, would also come under this heading.

Under union of wounds with suppuration he would place union by secondary intention and union by secondary adhesions, or, as sometimes called, by third intention.

The difference between the two classes being one of degree rather than of kind, and due to some circumstance, which produces a prolonged irritation; therefore the resulting inflammation is prolonged and the exudate increased in amount.

In the two classes of union by first and second intention there is a close analogy; in both there is inflammation, in both it is attended with exudation, though varying in amount, and in both the exuded material forms the bond of union.

In union by secondary adhesion we have the same exudation of inflammatory material acting as a bond of union; we have the exudation and its conversion into granulation; now if these are brought into contact, they coalesce in the same way as the exudation does in union by first intention.

If it is admitted that inflammation may occur without the intervention of micro-organism, an inflammation which is different from that excited by these bodies, for it neither tends to spread to contiguous parts beyond the area of injury, nor to infect distant parts through the blood-stream or otherwise, then he concludes the evidence is conclusive that the union of wounds is an inflammatory process.

THERAPEUTICS.

UNDER THE CHARGE OF

HORATIO C. WOOD, M.D., LL.D.,

AND

ARTHUR A. STEVENS, M.D.

Serumtherapy of Malignant Tumors.

E. Shweiler ("Die Erysipel—Erysipeltoxin—und Serumtherapie der bösartigen Geschwülste," Leipzig, 1898) gives a very complete and interesting review of the effect of erysipelas on malignant tumors, and the treatment of the latter by means of artificial serum. In one table are noted the effects of spontaneous or artificial erysipelas on malignant tumors. Fifty-nine cases are cited, of which fifteen ultimately recovered, and six died from the acute infection. A second table includes reports of ninety-five cases treated with erysipelas toxin alone or in combination with the products of the bacillus prodigiosus. Recovery occurred in fifteen instances, or about 16 per cent. In three other cases there was some improvement; in fifteen cases there was some marked constitutional disturbance,—fever, pain, dyspnea, pneumonia, sepsis, emaciation, vomiting, or collapse,—in nine cases there was rapid increase of the growth, and in fourteen cases death occurred during treatment, generally from collapse, sepsis, or pneumonia. A third table includes forty-nine cases treated with erysipelas serum. In thirty-seven of these there were local and constitutional disturbances, and in only one case was recovery observed. In four cases the treatment consisted in the use of cancer- or sarcoma-serum but the results were in no instance favorable.

It will be noted that the best results were obtained by erysipelas itself, 25 per cent. of the patients having recovered from the infection. From erysipelas toxin and Coley's fluid the percentage of recoveries was about 16.

The Treatment of Bronchitis.

Quincke (*Gaillard's Medical Journal*, October, 1898) draws attention to the fact that in bronchitis, as in the case of collections of pus, the object of treatment is to facilitate the draining away of the exudation. This is, however, possible in bronchitis only to a limited extent. Cough, and especially the act of vomiting, assists to this end. The same object has been attempted by means of the elastic corset, respiratory exercises, etc. Often in the early morning the bronchitic brings up a large quantity of sputum by the help of more or less persistent coughing. Quincke recommends that at this time the patient should lie as flat as possible for a couple of hours, so as to assist the draining of the secretion into the large bronchi, and hence its expectoration. The patient becomes accustomed to the position, even though with some difficulty, and can expectorate by turning the head to one side. After a few days the foot of the bed may also be raised from eight to twelve inches. In suitable cases the author says that in from two to four weeks there is a considerable diminution in the sputum. This mode of treatment is adapted to cases of chronic bron-

chitis which have led to a cylindrical or sacculated bronchiectasis in the lower lobes of the lung. It is of no avail in cases of diffuse, and especially recent, bronchitis, with general secretion, or in cases of abscess cavities communicating laterally or incompletely with the bronchi, or of cavities with irritating contents. It may be difficult to distinguish between these conditions in practice, and this mode of treatment may help in the diagnosis. The number of suitable cases is not large, but at times the results are remarkable.

Insomnia in the Insane.

Cristiani (*Riformo Medico*, June 16, 1898) has given lactophen for insomnia in over 200 cases of insanity with very good results. The dose given varied from one to three grains, the remedy being administered in some sweet emulsion. Sleep that had all the characters of a natural slumber followed in a very short time, lasted from four to nine hours, and was not succeeded by any bad effects,—no stupor or morning headache and no digestive disturbances. Like most other hypnotics, it lost its effect after continued use, but after a short intermission could be used again with good results. The author used it in all kinds of mental cases and in different physical conditions,—for example, cardio-vascular, kidney, and other diseases. He considers it quite safe and more generally useful—in insane subjects—than opium, chloral, trional, or any other hypnotic. As it has no taste or smell it is not difficult to administer.

Sodium Sulphate in Chronic Gastric Catarrh.

Simon (*Journal de Médecine de Paris*, September 25, 1898) has employed sodium sulphate in chronic gastric catarrh with favorable results. About six and a half ounces of lukewarm water, containing from seven and a half to fifteen grammes of sodium sulphate, are slowly sipped in the morning before breakfast. This treatment is continued for two or three weeks, fatty foods and acids being interdicted.

In mucous catarrh with hypochlorhydria, after the lapse of a few days, the nausea and epigastric distress disappear, and the stools become regular. The treatment has given negative results in atrophic gastric catarrh, inacidity due to cancer or tuberculosis, and gastralgia. The good effects are attributed to the stimulation of acid secretion and the motor function of the stomach.

Protargol.

Bossalino (*Gazzetta degli Ospitala*, November 27, 1898) recommends protargol, or albuminate of silver, in inflammatory conjunctiva and lachrymal duct. It appears as a yellowish powder, soluble in water, but not precipitated by acids or alkalies, nor reduced by light. He has found it beneficial in catarrhal conjunctivitis and in dacryocystitis. It was not particularly satisfactory in blepharitis or phlyctenular conjunctivitis. Bossalino has used it in ½-per-cent. solution as a lotion, and in 5- to 10-per-cent. solution as an application. It does cause smarting or irritation, and it is not precipitated by the tears.

Guillou (*Revue de Thérapeutique Médico-Chirurgicale*, No. 14, 1898) claims that protargol is a useful disinfectant in diseases of the genito-urinary tract. In gonorrhea he has obtained the same results with protargol as with potassium

permanganate and silver nitrate, perhaps somewhat less rapidly, but with less local irritation, less recrudescence of discharge, and less pain. The drug does not stain the fingers of the surgeon or the linen of the patient.

Formalin for Sweating Feet.

Gerdeck (*Riformo Medico*, November 15, 1898) recommends formalin in sweating feet. The sole but not the dorsum should be painted with pure formalin three times a day, and the region between the toes once a day. Four or five drops of the drug may also be applied to the shoe, as it serves to disguise the feted odor, as well as to preserve the leather. When the pure formalin cannot be tolerated a 30-per-cent. solution may be employed. The good effects last three or four weeks, when the treatment may be repeated. Under the applications the skin becomes dry and leathery.

Gastric and Intestinal Antiseptics.

Riegner, of Senator's clinic (*Deutsche medicinische Wochenschrift*, June 23, 1898, and *British Medical Journal*), first refers to the various views held as to the possibility of disinfecting the contents of the alimentary canal. He has himself continued the experiments of Strauss upon gastro-intestinal antiseptics. Stomach and intestinal contents were placed in graduated tubes, and grape-sugar in equal amounts added. The antiseptic was then added in known quantity in watery or alcoholic solution, and more rarely in powder form when not soluble. The author gives details of a number of experiments. As regards gastric antiseptics, he concludes that sodic salicylate, ⅛ per 1000, menthol ½ to 2 per 1000, and thymol ⅛ to ½ per 1000 have relatively high disinfecting powers. A medium disinfectant action is possessed by chinosol, chloral hydrate, soluble silver, and actol, and only a slight one by even large doses of steriform and ichthyol. As regards intestinal antiseptics, chinosol and thymol arrest fermentation in ½-per-cent. solution, and delay it in ⅛ per cent. Actol, bismuth salicylate, or bismuth beta-naphthol arrest it in 1 per cent., and delay it in ¼ per cent. Resorcin, chloral hydrate, silver, benzo-naphthol, and steriform are inferior to the agents above mentioned. From experiments it becomes obvious that antiseptics behave differently in relation to the stomach and intestine. Thus menthol is an excellent gastric, but an inferior intestinal, antiseptic. These questions cannot be definitively settled by laboratory experiments, but must be determined by practice. Thus a disinfectant is useless if too poisonous. Again, a gastro-intestinal antiseptic must be insoluble. This insolubility is also a guarantee against intoxication. Extensive contact with the intestinal contents is desirable, and hence the antiseptic should be given in frequent and small doses. In motor insufficiency of the stomach salicylic acid, menthol, and thymol have been shown to be of clinical value by Strauss. Among intestinal antiseptics Strauss has shown menthol to be worthy of recommendation. Thymol is inferior to menthol, and must be given on a full stomach to avoid irritation. Actol must be given in capsules or pills, which are not soluble in the stomach. Both bismuth salicylate and bismuth beta-naphthol are worth trying in flatulency. Sodic salicylate and chinosol are too soluble. Washing out the stomach and bowel is an important measure. Salicylic acid, menthol

0.25 grain, thymol 0.1 grain, may be added to nutrient enemata. The author comes to the conclusion that these antiseptic agents have a practical if somewhat restricted value.

OBSTETRICS.

UNDER THE CHARGE OF

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ASSISTED BY

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Superfetation.

Herzog (*Chicago Medical Record*, July, 1898) believes that the plug of mucus which is present in the cervical canal during pregnancy does not act as a serious obstacle to the progress of spermatozoa, especially since a similar mucous plug is frequently, if not generally, found in the cervical canal of the non-pregnant uterus. He also states that the claim as to the absolute, unconditional non-occurrence of ovulation during pregnancy is likewise incorrect. No doubt non-ovulation during pregnancy is the rule, but authentic cases now on record show conclusively that occasionally ovulation does occur during gestation, not only in the lower mammalian animals but in woman as well. He records three cases of superfetation in the women that have come under his own observation. He regards superfetation as a pathologic and not as a normal condition, which leads to abnormal processes in the course and termination of the gestation.

Extrauterine Pregnancy at Term.

Neugebauer (*Centralblatt für Gynäkologie*, No. 30, 1898) reports a case of extrauterine pregnancy in a woman, 36 years of age, in which he performed abdominal section, and extracted a full-grown, living child. There was not a vestige of fetal membranes, and the child was found to be free within the abdominal cavity. The placenta was attached to the posterior wall of the bladder. The child died nine hours post-partum. The mother recovered. In discussing the case the author concludes that originally the case was one of tubal pregnancy which ruptured at an early period, whereupon the child continued to develop within the peritoneal cavity.

Chloroform in Parturition.

Futrel (*Medical World*, No. 6, 1898) advocates the use of chloroform in every case of labor unless distinctly contraindicated by some grave pathologic lesion. During gestation the heart undergoes a normal hypertrophy, and consequently acquires an increase of capacity that serves to give quite a resisting power against the depressing influences which have been charged against the

use of chloroform in labor. The author summarizes his reasons for his advocacy of chloroform in practically every case of labor as follows: It shortens the period. It prevents shock and exhaustion. It reduces the liability of the cervix and peritoneum to rupture. It does not affect the child if properly used. It does not produce uterine inertia. It does not induce post-partum hemorrhage. It is more pleasant to inhale and less irritant to the air-passages than ether. It is not inflammable. It is prompt in its effect. Statistics and experience show that it is perfectly safe during labor when properly administered. It assists the woman in her expulsive efforts by obtunding her sensibility to the pain thus produced. It does not arrest the contractions of the uterus or abdominal muscles. It weakens the natural resistance of the perineal muscles. It renders great service to women who dread pain. It diminishes the chances of the nervous crises which are caused during labor by the excess of suffering. It makes recovery more rapid. It calms the great cerebral excitement which labor produces in nervous women.

Measurement of the Fetal Head.

Perret (*Journal des Sages-fem*) has found by experiment in ninety-four cases that the following method of measuring the fetal head *in utero* gives nearly exact results. In each case he waited twenty-four to forty-eight hours after labor before taking the confirmatory measurements in order that the head might resume its normal proportions. In every instance the diameter was found to vary not more than two millimetres from that estimated, with two exceptions; in these, errors of three and seventeen millimetres respectively were due to flexion of the head. The method is as follows: The woman is placed at the edge of the bed, and after recognizing, by vaginal examination, the position of the head, the latter is placed in the transverse position by manipulation through the abdominal wall. The occipito-frontal diameter is then measured with the branched cephalometer, subtracting from the gross measurement twice the thickness of the skin and subcutaneous tissues, determined by pinching up a fold. As the biparietal diameter is known to be approximately twenty-five millimetres less than the occipito-frontal, the former may finally be determined by subtracting this distance from the occipito-frontal diameter estimated as described.

Extrauterine Pregnancy.

Beckmann (*Zeitschrift für Geburtshülfe und Gynäkologie*, Bänder xxxviii und xxxix) differentiates two forms of interstitial pregnancy,—namely, graviditas tubo-uterina and interstitialis propria. The latter is less frequent but far more dangerous. Among 1324 cases of extrauterine pregnancy there occurred only forty of the interstitial variety. Beckmann observed and reports a case of interstitial gestation with rupture of the sac, which he cured through laparotomy and supravaginal amputation of the uterus. In diagnosing interstitial gestation it is generally noted that the size of the uterus does not correspond with the estimated period of pregnancy. Besides this, there are the symptoms of internal hemorrhage and an absence of tubal enlargement. The removal of the sac from the uterus is rarely possible.

GYNECOLOGY.

UNDER THE CHARGE OF

CHARLES BINGHAM PENROSE, M.D.,

ASSISTED BY

H. D. BEYEA, M.D., AND H. L. WILLIAMS, M.D.

Operative Statistics of Hysterectomy in One Hundred and Four Cases of Cancer of the Uterus.

Thumin (*Berliner klinische Wochenschrift*, No. 18, 1898) gives a very interesting and instructive summary of the results of panhysterectomy for cancer of the uterus for the past ten years in Professor Landau's clinic in Berlin, the majority of the specimens having been removed *per vaginam* and compression forceps employed to control hemorrhage.

The diagnosis in every case was verified by microscopic examination, and in all cases when a cure has been stated the patients have been brought to the clinic and submitted to thorough examination.

Ages.—Seven cases occurred in patients under 30 years old; thirty-five cases in patients between 30 and 40; thirty-eight in women between 40 and 50; fifteen in those between 50 and 60; and nine cases in patients over 60,—making a total of 104.

Results.—Eight cases, or 7.6 per cent., died as a result of the operation. Thirty-two cases, or 30.7 per cent., are so far free from return of the disease. One died from recurrence. In thirty-eight, who are still living, recurrence is present. Recurrence is present, but no further statistics known, in seven more cases. Two cases died from metastatic growth in other organs. Fourteen died from causes unknown, and two were lost sight of,—making a total of 104.

Causes of Death.—In three cases no special cause of death was found. One died from ileus; the patient got out of bed the day after operation and walked several times about the ward with the hemostatic forceps still in the vagina. One case, complicated by intermittant diabetes, died in diabetic coma. One died six days after operation, from general exhaustion. Two deaths occurred from septic peritonitis, in one of which the patient was 82 years of age.

Non-recurrence.—As recurrence after four and a half years has recently been reported by Bonilly, Thorn, and others, only those cases are considered free from recurrence in which no fresh manifestation has occurred in five years' time. This is 30.7 per cent. Among the other cases in which recurrence occurred, out of 48, 13, or 27.087 per cent., were alive five years after operation. Fourteen cases of carcinoma of the fundus occurred. Of these all are living but four. One died three years after operation from another disease. One died from metastasis and two from recurrence within a year ofter operation.

Of the seven cases operated on under 30 years, three are free from recurrence, and of these two have been nine years and six and a half years respectively, so that a cure may be considered.

Extreme age is not considered a contraindication to operation. In nine cases operated upon in women over 60, recurrence occurred only once. One died from peritonitis, one from cause unknown, and one, three years after oper-

ation, from an intercurrent disease. The others are living and well, nine, seven, and five years after operation, respectively.

Recurrence is positively known to have occurred in forty-six cases. The average time before recurrence in twenty-four cases was 9.2 months. The average time before death was 16.82 months. In one case only could recurrence be attributed to autoinoculation, and this case was uncertain.

Preparatory operations are condemned, as they tend to produce parametritis, and inoculation is then more likely. Also, if interference is protracted, the case may become inoperable.

Complications.—In many of the cases the uteri were fixed by chronic pelvic peritonitis and chronic inflammatory changes in the adnexa. In one case a bilateral hydrosalpinx was removed. In another case in which operation was performed for vesico-vaginal fistula the fistula returned with recurrence of carcinoma. There were two cases of utero-vaginal fistula. One of these cases, in which the left kidney was also removed at the time of operation, died ten months later from recurrence; the other, four months after operation.

Secondary hemorrhage was twice met with. In the first case, which is still living and free from recurrence, bleeding occurred on the removal of a strip of gauze packing. This was easily controlled by a gauze pack, as was also a second hemorrhage on the ninth day. A third hemorrhage also occurred in this case on the twelfth day, and on exploration was found to come from the posterior vaginal wall. This was effectually stopped by clamps.

Ligatures had been used in the second case, as it had been complicated by descent and prolapse, and profuse hemorrhage occurred on the eleventh day. This was controlled, however, without difficulty, and the patient discharged on the twenty-third day. But she died, within two years, from recurrence.

The Indications for Operation in Renal Tuberculosis.

Park (*Journal of Cutaneous and Genito-Urinary Diseases*, August, 1898) concludes that when the kidney is affected with tuberculosis the sooner it is removed the better, provided there is no similar lesion in the other kidney, or elsewhere in the body.

It is only in rare instances that a diagnosis can be made so early that any treatment but the surgical can be depended upon, and it would be exceedingly rare to find a kidney where the tuberculous lesion was so isolated that it could be eradicated without removing the whole organ. The first point to be considered is the general propriety of the operation. The second point is as to exact diagnosis, whether one or both kidneys are involved. If both are affected, only harm, and no good, can come from the operation. The third point for consideration is as to whether the lungs or any other organ of the body are involved.

If the ovaries are involved, they may be removed at the same time with the kidney; but if other organs are involved, the operation is contraindicated. If the peritoneum is involved, it may perhaps be proper to remove the kidney by the abdominal route, for the purpose of exposing the peritoneal cavity to the air.

The danger of the operation itself is in proportion to the gravity of the condition requiring operation, and should be so represented to the patient.

The simple removal of the kidney in an ordinary case is not a long or difficult operation. But when it becomes necessary to remove a diseased ureter,

the operation is greatly extended, and requires extensive dissection, so that the operation is often protracted to the point of endangering life.

What is necessary to be done should be left to the judgment of the operator at the time of operation, and no fixed plan be agreed upon in advance.

Partial nephrectomy is contraindicated in theory, although apparently successful sometimes in practice.

The experience of a number of competent observers seems to show that after the early removal of a tuberculous kidney the progress of the disease in the remainder of the genito-urinary track is at least delayed, and in some cases entirely arrested.

The writer prefers the extraperitoneal operation of König in almost all cases when there is not some special indication for the selection of the abdominal route. In some instances it may be advisable to perform the operation at two sittings.

PATHOLOGY.

UNDER THE CHARGE OF

JOHN GUITÉRAS, M.D.,

ASSISTED BY

DAVID RIESMAN, M.D.

The Localization of the Lesion in so-called Capsular Hemianesthesia.

Charcot, in the seventies, described in the posterior part of the internal capsule an area as the sensory crossway, through which the impulses of general sensation and the special senses passed to the cortex, and a lesion of which produced, clinically, a hemiplegia more or less marked, with hemianesthesia involving general sensation and the special senses. But recent investigations have thrown new light upon this subject. In the first place, it has been found that the most typical instances of capsular hemianesthesia have occurred in hysteric individuals; and, secondly, it is now known that the special senses have a bilateral representation in the brain-cortex. If the lesion in the capsule involves the visual tract, an homonymous lateral hemianopsia results; if that tract escapes, there is no visual disturbance whatever. The same is true of the other special senses,—either there is a bilateral impairment or none at all.

The possibility of hemianesthesia effecting general sensation is not doubted, only the exact seat of the lesion is still to be established.

Dejerine and Long (*Comptes-rendus des Séances de la Société de Biologie*, December 30, 1898) have studied the subject, and have found that in practically all reported cases of capsular hemianesthesia the optic thalamus was involved by the lesion, and in those cases where it seemed to have escaped, its integrity was established only by the naked eye and not by microscopic examination.

In a case of lesion of the posterior segment of the capsule, without involvement of the thalamus, contracted by microscopic examination, there was only hemiplegia, not hemianesthesia.

Hemianesthesia occurs under two conditions: (1) When the thalamus is

diseased, with or without participation of the posterior segment of the internal capsule in the lesion, and (2) when the optic thalamus is intact, but more or less isolated by a lesion of its cortical connections. In the latter case the lesion is always very extensive. When the thalamus is involved the hemianesthesia is apt to be persistent. In order that a thalamic lesion may produce hemianesthesia it is necessary that the disease-focus be situated in the median portion, in front of the pulvinar and especially in front of the posterior and inferior portion of the external nucleus.

The Uric Acid Infarcts of the New-Born.

H. Spiegelberg (*Archiv für experimentelle Pathologie und Pharmakologie*, Band xli, Heft 6, December 20, 1898) has endeavored to ascertain the causes of the formation of uric acid infarcts in the kidneys of the new-born. No satisfactory theory exists. Virchow maintained that it was due to the profound change in metabolism following birth, and leading to an increased formation of uric acid. But the infarct is found only in about one-half the number of infants examined, and is not met with in many animals in which birth is attended by a transformation of the conditions of life as in the human infant. Vierordt attributed the formation to the feebleness of the oxidative processes in the infant.

The author was able, by injecting urates subcutaneously into puppies, to produce typical uric acid infarcts in the kidney. The necessary dose was 0.25 uric acid pro kilo of body-weight. In adult dogs the same relative quantity never produced infarcts.

Evidently, the uric acid is decomposed to a less extent in the infant's organism, but the cause of this is not a lesser oxidative process, for the author was able to demonstrate that the puppy oxidized sodium formate and thiosulphate more readily than the adult dog. Physical causes also play no part. The urine of new-born infants, despite its content of uric acid, still possesses a greater power of dissolving uric acid than the urine of adults.

The causes of the formation of the infarct are then still unknown; all that can be said is that uric acid is less readily decomposed in the infant's body.

The Augmentation of the Toxin-Production of the Diphtheria Bacillus through Symbiosis with the Streptococcus.

Paul Hilbert (*Zeitschrift für Hygiene und Infectionskrankheiten*, Band xxix, Heft 2) calls attention to the fact, noted also by others, that the toxin-production of the diphtheria bacillus in bouillon-culture is extremely variable; usually it appears in from one to three weeks, at times already on the first day, sometimes not until the sixth month, and occasionally not at all. The cause of this variability, which may be presented by bacilli from the same stock, is to be found in the nature of the nutrient medium. Abundance of sugar is unfavorable, marked alkalescence favorable to toxin-production. The latter—*i.e.*, toxin-production—also occurs earlier after surface than after deep inoculations. The value of the passage of air over the cultures is questionable. The author himself has studied the influence of symbiosis of the diphtheria bacillus with the streptococcus on toxin-production. He found, firstly, that when the two are growing together the bouillon becomes more rapidly alkaline, and the alkalinity reaches

a higher degree than in pure cultures of the diphtheria bacillus. Secondly, the toxin-production seems parallel with the alkalinity; both, however, are, as in pure cultures, somewhat variable. As to the causes leading to earlier and stronger toxin-production under these circumstances, three possible explanations exist: (1) The diphtheria bacilli grow more luxuriant in association with streptococci. (2) The streptococci produce a change in the culture-fluid which is favorable to toxin-production on the part of the diphtheria bacillus. (3) The virulence of the bacilli is increased through symbiosis. The first is possible, but plays probably no great part; the second—the change in the culture-media—is not a factor,—the streptococcus tends to produce an acid, and this by lessening the alkalinity diminishes the toxin-production. The last theory is the most likely one of all. The increased toxicity of the mixed culture is not due to a "mixed toxin," the toxin has all the properties of the pure diphtheria toxin. The bacilli during symbiosis undergo a change, by which they are stimulated to increased toxin-production,—in other words, their virulence is intensified. In practice we must combat the increased virulence of the diphtheria bacillus when associated with the streptococcus by the use of larger doses of antitoxin, and must guard against a secondary infection with streptococci by the earlier employment of the antitoxin serum.

Serodiagnosis of Psittacosis.

An increasing number of infectious diseases is coming within the range of exact diagnosis through the medium of the specific reaction of the serum on the pathogenic micro-organism. One of the most recent additions to the series of diseases thus diagnosable is psittacosis. Psittacosis is an infectious disease occurring in birds, particularly in parrots, and transmissible to man. In the avian family the symptoms are diarrhea, wasting, loss of appetite, and falling out of feathers. In man the disease runs the course of a grave typhoid fever, with diarrhea and marked pulmonary symptoms; usually there is a spreading pneumonia. The cause of the disease is probably a bacillus, discovered by Nocard, which resembles somewhat the bacillus of typhoid fever.

Nicolle (*Comptes-rendus des Séances de la Société de Biologie*, December 10, 1898) reports an epidemic of psittacosis attacking eight persons, four of whom succumbed. The source of the disease was a sick parrot. The author was unable to isolate Nocard's bacillus from any of the cases, but obtained a typical agglutination of a culture procured from Nocard. In one patient the serum agglutinated the bacillus on the eighth day of the disease, in strength of 1 to 50; on the following day, during the agonic period, in strength of 1 to 60. In another the reaction was absent on the sixth day, but appeared on the eleventh. The blood of a third patient, convalescing from a mild attack, had no agglutinating powers. Nor did that of the parrot show any such power on the fifteenth day after recovery.

The blood of one patient, although he had never had typhoid fever, reacted also with the typhoid bacillus, and the serum of all animals inoculated with cultures of the psittacosis bacillus has some influence on the typhoid germ, a fact that is explained by the great similarity of the two micro-organisms.

BOOK NOTICES.

THE PRINCIPLES AND PRACTICE OF MEDICINE, Designed for the Use of Students and Practitioners of Medicine. By WILLIAM OSLER, M.D., Fellow of the Royal Society; Fellow of the Royal College of Physicians, London; Professor of Medicine in the Johns Hopkins University; Physician-in-Chief to the Johns Hopkins Hospital, etc. Third edition, entirely revised and enlarged. New York: D. Appleton & Co.

This work received the stamp of universal approval upon the appearance of the first edition in 1892, and was, by common consent, ranked as one of the best single-volume works on internal medicine ever issued in any language. This statement is made soberly and without the faintest tinge of flattery. We do not have to seek far for the explanation. Dr. Osler's opportunity for observation at the bedside, in the post-mortem room, and in the laboratory has been exceptionally large, and he has therefore been able to write from personal experience to a degree given to few authors.

Although but six years have elapsed since the publication of the first edition, the many advances in different departments of medicine have induced the author to make a recast of the text for the present edition. The extent of the revision will be apparent by alluding to some of the more important changes. The following sections are new, or have been rewritten: Vaccination, beriberi, bubonic plague, cerebro-spinal fever, pneumonia, malta fever, yellow fever, dengue, influenza, leprosy, glandular fever, the gonorrheal infection, cancer of the stomach, the gastric neuroses, enteroptosis, the cirrhoses of the liver, jaundice, the diseases of the bile-passages, diseases of the pancreas, diseases of the spleen, lymphatism, Addison's disease, encephalitis, neurasthenia, erythromelalgia, hypertrophic stenosis of the pylorus, ether pneumonia, anesthesia paralysis, pneumonia, albumosuria, etc.

The section on typhoid fever contains much new matter, ten more pages being devoted to this subject than in the previous edition. Lobar pneumonia is considered with the specific infectious diseases; this article has also been extended several pages. Rheumatic fever has been transferred from the section on constitutional diseases to that on specific infectious diseases. Diseases caused by animal parasites now follow the last-named section, while intoxications and sunstroke come next. Purpura and hemophilia have been transferred from the section on constitutional diseases to that on diseases of the blood and ductless glands. The section on diseases of the nervous system has been entirely rearranged, and much improved.

It will be seen from what has just been said that Dr. Osler has taken advantage of the present opportunity to bring his book quite up to date.

A critical review of a work that has passed through three editions in only twice as many years is, perhaps, unnecessary. Our estimate of the book has been already expressed.

In the present edition a better quality of paper has been used, and it is printed from a new font of type. The size of the page is slightly larger, so that the material added but slightly increased the size of the book.

Eye-Strain in Health and Disease. By Ambrose L. Ranney, A.M., M.D., late Professor of Nervous Diseases in the Medical Department of the University of Vermont and of the Anatomy of the Nervous System in the New York Post-Graduate Medical School. Philadelphia: The F. A. Davis Company, Publishers.

Considered in a general way, it is a pity that American medicine should again be burdened with a series of half-studied empiricisms that have been dressed in the garb of science. Yet here, in the work before us, theories of the greatest moment are made to correlate themselves with badly arranged and distorted clinical material, and uncertain views on etiology are forced to balance a whole grouping of supposed symptomatologies that are frequently irreconcilable with the ordinary findings of the average clinician of common sense and good judgment.

Happily, free from scientific investigation, devoid of any rationalism, and unsubjected to the scrutiny of broad conversationalism, the subject-matter can at times, at a glance, be seen to run amuck. In truth, the two stiff, hard covers of the book must find it difficult to hold such a vast mass of irrelevant material as is contained within them.

To review such a book is a thankless task, and to see the possible essence of scientific truth it contains is difficult; but to warn the general medical world of extravagant claims is a duty.

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INTRATYMPANIC INJECTIONS OF HYDROGEN PEROXIDE.[1]

By B. Alexander Randall, M.A., M.D.,

PHILADELPHIA.

While there is little or nothing really new to say as to the value of hydrogen dioxide that has not constantly been urged by myself and others for years, and few cautions to be advocated as to its use beyond those which should be self-evident, there are a series of ill-founded assertions as to its dangers which have been smiled at by all who habitually use it, when they ought to have received explicit refutation. As to these and related matters I beg to offer some remarks.

It is greatly to be desired that we should secure some simple and safe method of treating the acute and chronic suppurations of the middle ear; and the drawbacks of most of the measures advocated make us very ready to listen to any novelties, especially if in apparent line with general surgical advance. The dry, aseptic method of Gradenigo and Pes has therefore been enthusiastically hailed, and in the form adopted by Larsen (*Archiv für Ohrenheilkunde*, Band xlv, Seite 285), in Copenhagen, of using sterile cotton pellets, which the patient or his attendant can easily change without infection when moist, seems likely to prove useful. The average duration of nineteen days, which represents his best results with acute suppurations, seems a little excessive; but a like series of cases treated by another method would have to be watched to full cure by a like standard before comparative conclusions could be drawn. But the sterile tampon treatment has never seemed to me to give sufficient relief to the patient's discomfort. It can be combined in the early stages with leeching, generally includes

[1] Read before the Section on Otology and Laryngology of the College of Physicians of Philadelphia, February 7, 1899.

free section of the drumhead to relieve tension and congestion, and can be aided by dry heat externally; yet this has rarely been enough in my experience; and I must be more fully assured of its equal, not to say superior, efficacy before I can refuse to my patients the comfort afforded by hot syringing.

That this syringing shall not be a source of infection is very important, and sterile if not antiseptic fluid is therefore in place; but as all, except the already septic cases, have tiny openings through the drumhead, often of the pouting and virtually valvular form, it will be found generally impossible to carry by the usual douching any fluid whatever into the middle ear. Hence the tardy response of many of these cases to our efforts at medication. Hence, also, the wisdom of injecting *hot* fluid to the bottom of the canal and the immediate seat of the inflammation, where its caloric can exercise its constringing and stimulant action through the actually or virtually imperforate walls. Dry heat externally has probably never any but indirect influence more than a quarter of an inch within the integument, and acts as a sort of harmless counter-irritation in relieving deeper congestion.

Since the auditory canal may contain infective material, which some suppose may be carried inward by the douching,—although they seem sure that their own gauze or cotton tampons could never play such a part,—it is often well to attempt to secure and maintain its sterilization. It is useless to attack the mercuric bichloride in such matters, —it is an idol too firmly set to be shaken any more than the oil-and-laudanum drops of preceding generations: I can only point out that it is very irritating in any useful strength, while many micro-organisms can grow in a 1 to 1000 solution. We have two admirable and efficient sterilizers in silver nitrate and hydrogen peroxide. Each has penetrating power; but the former is an irritant as well as an astringent, while its surface effect is destructive to living tissues. It is soon neutralized by its own chemical action, and has little but counter-irritant and revulsive effect, except in the immediate vicinity of its point of application. The peroxide, on the other hand, attacks all purulent and effete matter, sterilizing it by immediate oxidation, and the resulting liberation of gas boils and rinses the neighborhood, carrying out any detritus entangled in its froth and pressing deeper into every cranny in search for more. More than a hundred times more potent than mercuric bichloride in its officinal strength, it is entirely unirritating, except by the mechanical effect of its ebullition; and it can be weakened greatly by neutralization or dilution without losing its efficiency. Granting, for the sake of argument, that it carries inward any of the effete material met, it is a demonstrable fact that it sterilizes it in transit as no other irrigating fluid so really does.

Of course, some ultra-logical aseptic surgeons wholly condemn all irrigation as unscientific, assuming that gauze moppings can only wipe *out* septic matter, while fluids wash it *in:* but it is entirely unproved that their results bear out their contention or that irrigation must be rationally abandoned in surgery. The ready applicability of the douche to circumstances in which mopping is impossible or brutally clumsy, will make the former preferred until the real superiority of the latter secures its still lacking demonstration.

Yet, as stated, there is little or no penetration of any fluid injected into the external auditory canal in most acute suppurations and in many of the chronic,—even the gas-propelled solution of peroxide acting only upon the outer surface of the drumhead. Such statements as one recently encountered, that "if these latter applications are made to the acutely inflamed ear, mastoiditis usually results," can only evoke regret at the writer's evident bias. I cannot recall a case during more than fifteen years, during which I have freely and almost invariably used peroxide, where I could lay any such effect to its charge. As elsewhere stated (University Medical Magazine, October, 1897), I have seen a case of mastoid abscess arise under my care every year or two (perhaps a half dozen in the past ten years), and even this rare occurrence would be a serious charge against the peroxide, could its responsibility be shown. But this will probably be found a better proportion than can be generally claimed, since few of them occurred among the 1500 or more acute suppurative cases. I know of double that number of fatal intracranial extensions of suppuration in which there was no perforation, and therefore no possibility of such a route of infection,—not to speak of the numerous cases of mastoid empyema without drumhead opening. I should hesitate to draw any sweeping conclusions from my personal experience, since 1500 new cases a year comprise only about 150 of the acute suppuration; but I must be pardoned if I refuse to accept the most radical views based on much more limited observation and in utter conflict with the statistics of most men of considerable experience.

So long as the suppuration is free and the tympanic inflammation is of high grade there is doubt in many able minds as to the wisdom of entering the cavity with air or fluid. Much has been written of the dangers of inflation by way of the Eustachian tube, lest infection be carried up from the pharynx. Yet the naso-pharynx is open to fairly thorough cleansing by syringing and mopping, and a camphor-menthol spray will medicate the contained air in a way that probably sterilizes it (many sterilize the air in the Politzer-bag as if this and not the air at the tube-mouth were to be forced up into the tympanum); and then gentle inflation ought usually to succeed in bringing no

small amount of secretion down the tube, while carrying nothing deleterious up it. The quantity of secretion blown out this way or through the drumhead is generally of little moment, however, in the relief of the filling of the tympanum, for it is commonly renewed in a few seconds; but the establishment of due patulency of the Eustachian tube is very valuable. Injections of fluid by this route are not easy under favorable conditions, and under those of acute inflammation are possible only under a pressure both painful and dangerous. Whether infective material is ever thus carried up the tube is unproved,—certainly the trauma is sufficient to increase the inflammation and light up to seriousness the infection already present, and to this any ill results can be more plausibly ascribed. I never hesitate, as a matter of personal practice, to inflate by the Politzer method at any stage of acute inflammation, if the naso-pharynx has been duly cleansed; but as a teacher I often omit it, lest in careless hands it should do any injury or have this imputed to it on the authority of some men of high standing.

It is much the same with intratympanic injections, by way of the external auditory canal, of hydrogen peroxide or other fluids. Cases do not often require or easily admit of them in the full acuteness of the attack, and the conditions for their successful use are not always present when they can do good. Whether they greatly shorten the disease must often remain in doubt, since these cases are apt to assume a rather chronic appearance when really on the verge of prompt resolution; and they may heal immediately after the injection, but rather in spite of it than through its help. I adduce the topic here not to discuss its relative merits or any desirable modifications of the procedure, but because it gives full answer to the charges as to the danger of hydrogen peroxide. Used in all obstinate cases of chronic suppuration, I have yet to see an unfavorable result that could be rationally ascribed to it, any more than to the boric acid, against which Schwartze and his school have so much inveighed. But when the full-strength solution (3 per cent.) of hydrogen peroxide is injected through a small perforation into an acutely inflamed tympanic cavity, we surely put its powers for evil to crucial test. Invariably good results have followed this reprehended practice in my hands, with no instance of even apparent mischief. So, while I do not often practise it nor do I specially recommend it to others, I can emphatically assert, upon the basis of dozens of experiences, covering the past ten years, that to this crucial test the hydrogen peroxide has proved itself at least invariably harmless.

A CASE OF FOREIGN BODY (PIECE OF STEEL) IN THE OPTIC NERVE.[1]

By Charles A. Oliver, A.M., M.D.,

PHILADELPHIA,

One of the Attending Surgeons to Wills' Hospital; one of the Ophthalmic Surgeons to the Philadelphia Hospital.

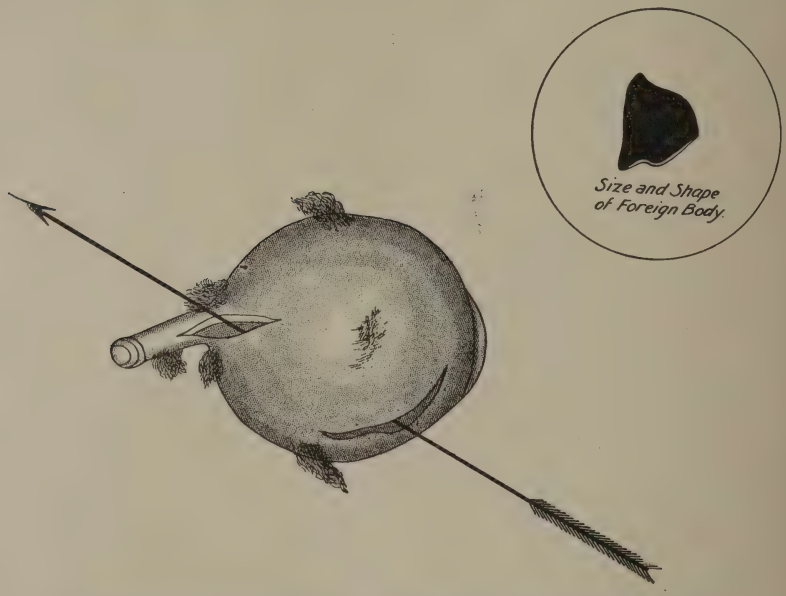
In the afternoon of the 18th of March, 1898, I found, on reporting to my clinic at Wills' Hospital, that C. C., a 33-year-old machinist, had been admitted into the wards of the hospital that morning, with the history of having had his left eye struck with a small piece of cast steel from an old tool at eleven o'clock the previous evening. The resident surgeon, Dr. Edmund D. Shortlidge, had cleaned the wound, had instilled several drops of an atropine solution into the conjunctival cul-de-sac, and had placed three interrupted silk sutures in the sclera. This being completed, he had the patient put to bed, and ordered ice compresses to be kept applied until I saw him, some three hours later.

Upon examination, I found that there was an irregular and jagged linear wound of about fifteen millimetres in length which extended through the lower outer portion of the sclera. The pupil was two-thirds and irregularly dilated, and the iris was irresponsive to light-stimulus. The anterior chamber was about one-fifth filled with freshly extravasated blood. No view of the fundus or even the slightest red reflex could be obtained. The globe was soft. A couple of blood-stained beads of vitreous humor were caught in the scleral wound. Vision was reduced to a doubtful area of light-perception in the lower outer field. After consultation with Drs. William F. Norris and George C. Harlan, I determined, as the field of vision showed that sight was lost, to operate for removal of the supposed foreign body, and if it could not be found, to enucleate the organ.

I had the patient etherized, reopened the wound, and introduced in various directions, particularly towards the posterior pole of the organ and in the region of the optic disk, a straight electrode that was charged with a current of sufficient strength to lift an ounce of steel keys on a ring. Twice, during the manœuvring in the posterior part of the eye, I felt the impact of metallic contact, but no dragging sensation could be gotten. Proceeding to enucleation, I removed the

[1] Read before the January, 1899, meeting of the Section on Ophthalmology of the College of Physicians of Philadelphia.

globe without any difficulty or loss of its contents, until I came to sever the optic nerve,—which I always do as far back of the globe as possible. At this juncture my scissors encountered a dense hard structure that was seemingly fastened in the optic nerve, just outside of the eyeball itself. A moment's search with my finger-tip showed that a piece of metal was fastened into the nerve immediately behind the eyeball. Excising the nerve behind the foreign material and dissecting a few remaining muscular strands free from the eyeball, I lifted the organ out of the socket, and found that a flat and irregular mass of steel, weighing five and a half grains, had passed through the eyeball and split the outer and lower three-fourths of the optic disk away



Showing external positions and relative sizes of points of entrance and exit of the foreign body.

from the remaining fourth, and wedged itself for at least six millimetres' distance into the optic-nerve tissues almost entirely outside of the globe. A minute portion of the metal projected into the vitreous chamber through the torn optic-nerve head.

Healing of the socket was uneventful. The other eye was normal in every respect.

Study of the sketch, made for me by Dr. Howard Mellor, of this city, shows the external positions and the relative sizes of both the points of entrance and exit of the foreign substance.

The case is interesting for several reasons:

(1) The almost unique form of direct traumatism to an unusually well-protected portion of the optic nerve.

(2) The rarity of the position of the point of exit of the metal in which, in spite of the bulwark of the longitudinally placed fibres of the optic nerve, the foreign body was not prevented from escaping from the posterior portion of the globe.

(3) The correctness of the clinical opinion, hazarded from the position of the area of the field of *absolute* blindness, that the optic nerve, with the exception of its upper inner segment, had been injured, as proved by the post-mortem examination of the tissues.

(4) The inability of the magnet to withdraw the foreign material back into the eyeball, although the instrument was twice in contact with the portion of the metal that was protruding through the optic-nerve head into the vitreous chamber.

(5) The proof of the wisdom of the belief that blindness would have become complete, as shown by the almost complete severing of the optic nerve at its entrance into the eyeball.

A CASE OF HEREDITARY SYPHILIS OF THE NASO-PHARYNX AT PUBERTY.

By P. S. Donnellan, M.D.,

PHILADELPHIA,

Laryngologist to St. Agnes's Hospital.

The patient I have had the opportunity of exhibiting to the section this evening presented herself at my clinic at St. Agnes's Hospital on January 3, of this year, with the following history: She is 15 years of age, and is the eldest of eight living children, who are all in good health. Both parents are living and well, and, as far as I have been able to discover, have never exhibited any evidence of specific disease. Her mother states that her first child was still-born, seventeen years ago, and two years later the birth of the second child—the subject of my paper—occurred. She passed safely through the usual illnesses of infancy and childhood, and exhibited no symptoms of any abnormal conditions of health until she was eight years old, when, without apparent cause, she developed a symmetrical swelling on each elbow in the region of the olecranon process. These swellings rapidly increased to the size of walnuts, and formed ulcers which involved the periosteum and bone. After about six months of local treatment by the family physician, who regarded the case as one of tubercular joint-disease,

healing took place, and the resulting scar-tissue, as you have observed, is quite characteristic of specific disease.

The patient remained in good health until she was thirteen years old, when puberty began and menstruation was established. Three months later her mother noticed a small pimple on each side of the nose. These pimples gradually spread to the adjacent portions of the upper lip, and at the same time two small red spots were noticed on the soft palate above the uvula. These spots formed ulcers, and, as we have seen, perforation of the soft palate resulted.

In spite of treatment, which appeared to have been entirly local, the disease progressed, the ulceration of the nasal wings increased, and the patient suffered continuously from profuse purulent nasal discharge, occasionally mixed with blood.

When I saw the case for the first time, one month ago, the appearances were as follows:

An ulcer, circular in shape and about the size of a quarter dollar, was situated on each side of the nose, extending to the adjacent portions of the cheek and upper lip. These ulcers were symmetrical in shape and were covered with conical scabs, which gave them the appearance of typical rupial sores. Examination of the anterior nares showed a perforation of the septum about the size and shape of a ten-cent piece. The edges of this perforation were inflamed and covered with sloughs. There was an ulcer on the anterior portion of the right lower turbinal, while the orifices of both nares were much contracted from excoriation caused by the nasal discharge, which was very profuse and offensive. The mouth was in good condition, except for the perforations of the soft palate in the middle line about half an inch above the base of the uvula. There were no evidences of previous specific lesions of the tonsils or post-pharyngeal wall, nor were any abnormal appearances noticed in the larynx.

Notwithstanding the absence of an antecedent history of specific disease in either parent, the history of the case and the symmetrical character of the lesions decided me in making a provisional diagnosis of hereditary syphilis, and the patient was placed on $\frac{1}{48}$ grain of bichloride of mercury, with two grains of iodide of potassium, three times a day. The rupial crusts were removed after poultices had been applied to soften them, and to the underlying ulcers black wash was applied daily, followed by an ointment containing ten grains each of calomel and aristol to an ounce of lanolin. The patient was instructed to report to the clinic three times a week. Under this treatment the disease began to subside almost immediately, the ulcers rapidly contracted, and took on healthy action. In three weeks they were almost healed. On the 24th of January she began to exhibit signs of mercurial ptyalism,

so the bichloride mixture was omitted for three days, and resumed in doses of half the previous strength. The progress towards recovery has been so gratifying that I am hopeful the disease will ultimately be arrested.

The subject of hereditary syphilis of the naso-pharynx has much interest for the rhinologist, by reason of the fact that when it occurs in early adult life its true character is sometimes not recognized, and in the absence of a well-defined history of the disease in either parent errors of diagnosis result in disastrous consequences to the patient. Most observers agree that when hereditary syphilis shows itself in a child, two periods are usually selected for its appearance: the first from birth until the fifth year, during which the lesions correspond to the secondary eruptions of the acquired disease, and the second about puberty, the lesions being characteristic of the tertiary form. Between these two periods there may be an interval of health, during which no specific manifestations occur. Again, the child may show symptoms of the disease within the first five years of its birth, and, if it survives, may have no further evidences of syphilis. On the other hand, the first appearances of the disease may be noticed about puberty, as above mentioned. When it occurs at this time it usually shows itself in the nose, and, unless its true nature is promptly recognized and intelligently treated, it may cause rapid destruction of the nasal cartilages and bones with great deformity as the result. These characteristic lesions of nasal syphilis are so well known to you that I will not occupy your time in describing their appearances. It is important to note, however, that inherited syphilis at puberty usually manifests itself in the female sex, and for obvious reasons the avoidance of disfigurement by appropriate treatment is particularly important.

The diagnosis of late hereditary syphilis is somewhat difficult, and many cases of the disease are treated as lupus or eczema, with unfortunate results to the patient. Lupus begins usually on the face and extends towards the nose, which it afterwards invades, and attacks the lateral cartilages, leaving the bony framework unaffected. Its progress is always slow. Hereditary syphilis, on the contrary, begins in the nasal cavities, pursues a rapid course, and affects the cartilages and bones in succession, extending later, if unchecked, to the face. In doubtful cases the therapeutical test of antispecific treatment will establish the true character of the disease. The symmetrical nature of the lesion is another important point to remember in the diagnosis, and will often assist in clearing up a puzzling case, as we have seen in the one I have reported.

The prognosis depends on the previous health and resisting power of the patient and on the activity of the disease.

As Bosworth says, "The later the development of the disease the more favorable the prognosis, in that the child has had an opportunity of gaining vigor and strength to combat the blood-poison when it manifests itself, and, furthermore, I think it may be stated, as a rule, that the later the disease manifests itself, the slower its progress." Regarding the question of ultimate disfigurement, it is difficult to express a positive opinion in a given case until the child has shown its power of response to appropriate treatment.

As to treatment, it is almost unnecessary to say that the sooner the patient is placed on antispecific medication the better, after the true character of the disease has been recognized; even in doubtful cases, it is well not to temporize, but to try at once the therapeutical test. Realizing the similarity between the late hereditary form of syphilis and the tertiary form of the acquired disease, that they are true gummatous infiltrations, the mercurial selected should be combined with iodide of potassium, if we wish to accomplish satisfactory results.

The method and form of antispecific medication will depend on a careful study of each individual case. As a rule, the combination of bichloride of mercury with iodide of potassium, in suitable doses, will be found satisfactory. When symptoms of mercurialism show themselves, the treatment should be suspended for a few days and resumed in smaller doses. The object being to keep the patient under the influence of the drugs until all evidences of the activity of the disease have disappeared. Personally, I am in favor of keeping such cases under treatment for two years, giving three months' antispecific treatment alternately with a month's interval during which no medication is given. In this way a tolerance of the drugs is not established, and a better response to their influence is obtained. In some cases it may be necessary to give the mercurial by inunction or hypodermically, where the activity of the disease is not promptly arrested by the plan I have referred to above.

Local treatment is of the greatest importance, and must not be lost sight of if we wish to accomplish the best results. The black wash, used as a nasal spray, will be found of service in stimulating specific ulcers to healthy action, and where crust-formation retards their healing an ointment containing 10 per cent. of oleate of mercury, applied twice a day, is very effective.

Attention to the general health of the patient is also an important factor in contributing to successful results. A generous diet, with plenty of eggs and butter, should be given. To combat the anemia, which is almost invariably present, some preparation of iron is indicated, preferably the tincture in ascending doses, combined with Basham's mixture. When the disease is finally arrested and the re-

sulting disfigurement is a source of embarrassment to the patient, the question arises, Is a plastic operation for its correction justifiable? I think it is generally admitted that such cases are "the despair of surgery," and any attempt to remove the deformity is usually a failure, unless we can be thoroughly satisfied that the disease has been eliminated from the system.

INVERSION OF THE VAGINAL TUNIC IN THE OPERATIVE TREATMENT OF HYDROCELE.

By Charles Greene Cumston, M.D.,

BOSTON,

Assistant Professor of Surgical Pathology in the Faculty of Medicine of Tufts College.

As the radical treatment of hydrocele is a subject of some importance to the practical surgeon, I beg to describe a technique that has given me very satisfactory results in some cases of this affection. All the various methods of radical treatment of hydrocele have as an aim the opening of the vaginal tunic, but they differ in the manner of treating the serous membrane, some operators simply making an incision into it, while others remove it completely, in order to remove the source of secretion of the pathologic fluid.

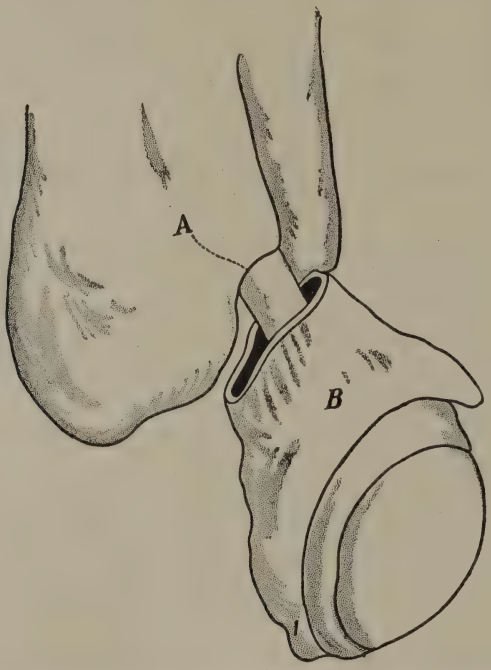
Volkmann incises the integuments of the scrotum, following the long axis of the tumor, and then incises and freely dissects out the vaginal tunic, and completes the operation by irrigating the cavity with a 3-per-cent. phenol solution. The edges of the serous membrane are then sutured to the borders of the skin-incision, thus establishing a free drainage of the serous cavity. A compressive aseptic dressing is applied over the bursæ.

Julliard's operation, which I have described in detail in a recent number of the *International Clinics*, is one that I have done a number of times with very good results. It amounts simply to a partial excision of the vaginal tunic, just enough being left to *exactly* cover the testicle, so that when brought over and sutured it snugly covers the gland, no space being left. This method has the advantage of doing away with the pathologic cavity, and will consequently prevent the occurrence of another collection of serum.

This operation requires much care and skill in excising just enough of the tunic and in suturing the parietal and visceral layers of the serous membrane in order to obtain a perfect result.

Total excision of the vaginal tunic was put into practice by Bergmann. After freely incising the serous membrane of the seminal gland, the fluid is allowed to run off, and the vaginal tunic is then dissected carefully off the fibrous tunic of the bursa.

This dissection necessitates a great amount of care to prevent any injury to the elements of the spermatic cord, which is more or less adherent. The dissection should be carried over the entire surface of the parietal vaginal tunic, and the operation is completed by cutting it *closely* off at the point where it reflects onto the testicle.



A, opening in the scrotum reduced, allowing the passage of the spermatic cord; *B*, vaginal membrane turned inside out.

A deep catgut suture brings the fibrous tunic of the bursa in contact with the seminal gland, which has been laid bare, and is only covered by the visceral layer of the serous membrane. All chances of a recurrence of the hydrocele is impossible, but the difficulties of the dissection are even greater than in Julliard's operation, especially in the neighborhood of the epididymis and spermatic cord, when we are dealing with cases of congenital hydrocele extending high up near the inguinal canal, and spreading out the vascular supply of the testicle.

It is to avoid these difficulties that we resort to inversion of the vaginal tunic. This operation principally consists in the fact that the

parietal vaginal tunic, after being incised over the anterior aspect of the seminal gland, is everted backward, so that when the operation is completed, the epithelial layer of the serous membrane faces the envelopes of the bursa instead of being turned towards the parenchyma of the testicle. The convex aspect of the gland is consequently exposed, while the serous cavity is abolished by the incision and inversion of its membrane.

There are two techniques which may be employed, one being due to Jaboulay, of Lyons, the other to Doyen, of Rheims. One of two anatomical conditions must be present in a case of hydrocele,—namely a closed vaginal tunic,—that is to say, an ordinary hydrocele,—or, on the contrary, we may have a congenital hydrocele which communicates with the peritoneal cavity.

In the closed variety of hydrocele, a long incision is made over the fluid collection down to the fibrous tunic of the bursa. The loose cellular tissue is then broken down with the finger, and the sac is freed from the surrounding tissues. The testicle, along with its distended vaginal tunic, is brought out through the incision in the scrotum just as is done in castration. All bleeding points are now ligatured. The fibrous and vaginal tunics are then incised over the anterior aspect of the testicle, the exact position of the seminal gland having been made out beforehand, so as to avoid wounding it in case there should be an inversion of the gland.

The incision of the vaginal tunic should extend the entire length of the fluid collection, and, if made over the anterior aspect of the testicle, we will avoid injuring the vessels of the cord, and especially cutting the vas deferens. This makes a kind of enucleation of the testicle, while the epididymis and spermatic cord are covered by the *external* aspect of the parietal vaginal tunic, and the latter is retained in its new situation by catgut sutures, thus holding back the everted borders of the serous membrane.

The testicle is then returned into the bursa and the cutaneous incision is closed, and a gauze wick inserted, if deemed necessary, but if asepsis has been well carried out, I believe that drainage is unnecessary.

When we are dealing with a congenital hydrocele, which communicates with the peritoneal cavity, the cutaneous incision should be carried up to the external ring of the inguinal canal. The vagino-peritoneal canal should be ligated at the ring, and an incision of the distended vaginal tunic will then allow this serous membrane to be brought completely around the spermatic cords.

In Doyen's operation an incision a little over two centimetres is made at the lower part of the bursa, and through this incision the vagi-

nal tunic is opened by steadying the edges of the skin incision with hemostatic forceps. The fluid then flows off, and the tumor being then reduced in size, the entire vaginal tunic is drawn out of the scrotum. Both it and the testicle are easily enucleated, because the loose connective tissue is easily separated from it by the finger. (See figure.)

The testicle is drawn through the opening in the serous membrane, which is thus brought into complete inversion, and, if necessary, the opening in the vaginal tunic may be enlarged with the fingers. The parts are then returned into the bursa, and a few sutures close the small cutaneous incision. When there is a bilateral hydrocele, the scrotum is incised only on one side; the corresponding testicle is first treated in the above manner, and then its fellow on the opposite side is drawn out through an incision made in the septum dividing the bursæ.

Although there are certain advantages in Doyen's operation, still I believe that, all things considered, the technique first described is better. The report of cases is generally of little value, and I will simply mention the indications for performing inversion of the vaginal tunic.

In congenital hydrocele I believe this method to be superior to all others, because the chances of a recurrence are completely abolished. Its indication is still more absolute when a congenital hydrocele is complicated by a congenital hernia, because we can operate on the sac of the hernia at the same time.

Another indication is, when we are dealing with a hydrocele of long standing, with thick walls, and a tendency to transform into an hematocele. And, lastly, inversion should be resorted to in every case where other methods have been unsuccessfully employed.

SCHLEICH'S MIXTURE FOR ANESTHESIA

By Walter Lathrop, M.D.,

HAZLETON, PA.,

Superintendent and Surgeon, State Hospital.

I READ a paper on the above mixture before the Luzerne County Medical Society, at Wilkes-Barre, July 6, 1898, in which I gave my experience in sixty-five cases. I have now used this mixture in upward of 150 cases, and this paper is a *résumé* of my experience.

The history of anesthesia shows many attempts to modify or introduce new substances, and, I believe, a personal experience is an honest basis upon which to reason for or against a new procedure.

Schleich holds that anesthetics are dangerous in proportion as their boiling points differ from the temperature of the body.

He maintains that the absorption of a general anesthetic is dependent on the boiling point, or maximum evaporation of the substance used. If the boiling point, or maximum evaporation, approaches the temperature of the body, the lungs are capable of regulating the elimination, so that nearly as much is exhaled as inhaled. When the maximum is greater, more of the narcotic is absorbed than is eliminated, and in this case elimination falls upon the kidneys, heart, and liver; at least they are called into action: this shows why the after-effects of chloroform are more pronounced than ether.

Ether has a maximum evaporation of 93° F., at a temperature of 100.4°, and must dilate and expand the alveoli of the lungs, producing some cyanosis. Chloroform, owing to its high boiling point, 159°, is absorbed by the blood to a greater extent than needed.

A drug that evaporates rapidly is eliminated by the respiratory organs rapidly, and one which does not evaporate quickly will remain longer in the system, and become more dangerous as inhalation progresses.

Bromide of ethyl, having a boiling point of 102° F., very near the temperature of the body, would be an ideal anesthetic, were it possible to overcome the action of the bromine.

The mixtures recommended by Schleich are three:

No. I.—Chloroform	1½ oz.	Boiling point, 38° C., or 100° F.
Sulphuric ether . .	6 oz.	
Petroleum ether .	½ oz.	
No. II.—Chloroform . . .	1½ oz.	Boiling point, 40° C., or 104° F.
Sulphuric ether .	5 oz.	
Petroleum ether .	½ oz.	
No. III.—Chloroform . . .	1 oz.	Boiling point, 42° C., or 107° F.
Sulphuric ether .	2⅔ oz.	
Petroleum ether .	½ oz.	

There have been numerous reports upon this mixture by different surgeons, nearly all in its favor.

Maduro, Mayer, Meyer, Simpson, Delavan, Faries, Garrigues, and Skene have given it trial, and the majority have been well pleased with its action. Meyer, of New York, who was one of the first to use the mixtures, and who wrote several papers upon the subject, now uses the chloroform and ether, I believe,—the so-called "M. S.," or molecular solution. He claims great satisfaction from this, and was led to use it from experiments made, by which he found petroleum ether, if used alone, was a poison.

Professor Garrigues, in a paper (*Medical News*, November 12,

1898), gave a very excellent account of his work with the mixtures, and he covered the ground very carefully, but in a recent number of the same journal (December 27) he reports three cases in which dangerous symptoms developed, and which cases caused the doctor to lose faith in the anesthetic. Possibly he was right in blaming the mixture, but I believe that in those same cases, under the same conditions, that ether might have given the same troublesome symptoms. I do not for one moment question the discernment and ability of a man for whom I have a great deal of respect, and whose observations are always of interest, but I hope Professor Garrigues will not abandon Schleich's mixture without further trial.

My experience has been in upward of 150 cases, both mild and severe; dispensary cases and those in the wards; adults and children, strong and weak, and the results have been such that I am thus far a convert to the Schleich mixture, and see no reason to change my belief in its efficacy, though should I have dangerous or troublesome symptoms at any time,—more than I would expect or have had with ether,—I would quickly abandon it as unsafe; but at present it is the only anesthetic used here, and has won for itself adoption among several practitioners in this city. When I first began its use, the No. 3 mixture was chosen, and it was given in the majority of the first sixty-five cases, as reported in my first paper; since then, however, we have used the No. 1 almost exclusively, and with great satisfaction.

An Allis inhaler is used, and a few drachms poured upon it; when the patient is about under (or over the first stage) a towel is put over the inhaler, and after that only a few drops, at short intervals, are needed to keep up the narcosis.

Patients can usually be anesthetized in from five to seven minutes; sometimes less than that; they come out rapidly, and are soon fairly rational. From two to three ounces are usually enough for an operation lasting thirty to forty minutes. There is very seldom cyanosis; collection of mucus in the throat—so annoying with ether—I have seldom seen; there is very little after-thirst, and much less diffusion of ethereal vapor.

The pulse, as a rule, remains full and strong, save where there had been much shock; in fact, the pulse seemed often to be strengthened: vomiting is comparatively rare, and has not been severe at any time after operation, save in two cases; nausea I have noticed quite frequently; but vomiting and retching, seldom. There is certainly a tendency for patients to "swallow their tongue," but the tongue-forceps speedily relieves the condition, if it occurs.

In speaking of vomiting, I find that we had two cases in which vomiting occurred on the table, and three cases vomited after their return to consciousness.

The respiration should be watched carefully, and the person giving the anesthetic should not allow his attention to be drawn from the patient.

A shallow respiration, or a deep sonorous one, is a signal to withdraw the inhaler, and allow free air. We have never had a dangerous symptom, or one in which the trouble did not speedily disappear, by drawing the tongue forward. This dropping back of the tongue, that I have mentioned, seems to me to belong to Schleich's mixture, as I have never noticed so great a tendency under sulphuric ether; it occurs here in about one out of every four or five cases.

I have given strychnine in several cases, after the anesthetic, where the patient had been severely injured. There has been very little depression in our cases, but when present, it was quite severe.

In our day of progress, when so many new innovations are being introduced, it is hard, indeed, to select the good from the bad. I do not ask any one to give up ether (the sheet-anchor of safety during the past) for Schleich's mixture; for this new anesthetic must needs be tested in not hundreds but thousands of cases to demonstrate its worth, or defects; but I would ask the readers of this article to *try* it for themselves, faithfully and carefully, and report their experience in not one but a dozen cases, and, in the aggregate, we would get a great many reports of a large number of cases, and be able to deduce some scientific truth that would be of benefit to all of us.

In this institution we may have a large number of the very best results from its use, while our neighbors may experience the reverse, and unless reported for the benefit of our profession, no safe conclusion can be reached.

If the opinion of the majority is against Schleich's mixture, I am ready to abandon it; but at present I see no reason, from my experience, to change, as it has been most satisfactory in every way to all concerned. I forgot to mention that in short operations, about the face or neck, the No. 3 is very useful.

As we are all willing to advance, and to try what seems good, so my excuse for presenting this paper is to give my own experience, and to draw out that of other men, whose experience and wisdom are far superior to my own, and whom we are glad to look up to for the best and wisest teaching. The discovery of the sleep-producing vapor lifted the veil of suffering from the face of agony in the past, and permitted dreams of peace to pass through the sleeper while the surgeon calmly and skilfully completed his work, and as we are all working for the best, some day will be given to us the long-sought nepenthe that the ancients feebly worked to produce, and which mankind has labored to perfect.

ALUMNI NOTES.

Meeting of the New England Alumni Society of the University of Pennsylvania, held in Boston, January 17, 1899.

This was a well-attended, enjoyable, and in every way successful meeting. Thirty of our alumni were present, and addresses were made by Dr. J. William White and Professor George Stuart Patterson, of Pennsylvania; Professors Beale and Hollis, of Harvard; Mr. Samuel O. Elder, president of the Yale Alumni Association, and others.

The editors have obtained from Professors J. William White and George S. Patterson an abstract of the speeches delivered by them. Dr. White spoke in part as follows:

Boston, Franklin, and the University of Pennsylvania.

I find it impossible to begin an after-dinner speech with anything but an apology. I am one of those unfortunate persons whose brains and stomachs will not work at the same time, and while I *may* be acquainted with some facts that would interest you or stories that would amuse you, it is practically certain that I will fail to produce them under these circumstances. I accepted with great reluctance, and only under orders from head-quarters, the invitation to be with you to-night, because I wanted to spare both you and myself this ordeal. And I was especially anxious to avoid it because I knew I would have to talk to Boston men in Boston, and to use mere Philadelphia English in a place where it is said the very owls say "To whom! to whom!" instead of "To hoo! to hoo!"

And yet, if I only *were* an after-dinner orator, what an inspiration I could find in both the place and the occasion! Boston was the first great city I ever saw on leaving Philadelphia, and I was fortunate enough to come here for the purpose of starting on a voyage of a year or more with the greatest scientist of his day,—Agassiz,—and thus had the never-to-be-forgotten happiness of meeting among other notable men who were his friends, the man whom, of all others in my profession, I most admired,—Oliver Wendell Holmes. I was brought up on Holmes and the *Atlantic Monthly*, and years afterwards I derived unalloyed pleasure from having a paper of my own accepted by and actually printed in that periodical. Soon after I sat next to a Boston literary man at dinner at Weir Mitchell's. I mentioned the *Atlantic*

Monthly with the intention of leading up to some allusion to my own article, and thus establishing a sort of literary fellowship with him. But before I could do this he said, "Ah, yes! It used to be an excellent magazine, but of late it has greatly deteriorated in the character of its material." I changed the subject.

That incident occurred to me to-day, and I wondered whether in a critical and literary way Boston generally had, fortunately for me, deteriorated enough to justify the hope that an outsider (with a higher admiration for it and for the general intelligence of its community than for any other place and people on earth) might be dealt with charitably on an occasion of this sort. Please don't be as critical as you can until Professor Patterson's turn comes. I have no desire to intercede for *him*. I have two little boy friends, the elder of whom—Philip—the other day, in a moment of anger, called the younger—Francis—a "Spanish girl baby." This combination of epithets seemed so overwhelmingly vile that Francis was at once reduced to tears; but that night when prayer-time arrived, he said, "Oh, Lord, take mother into heaven; and, oh, Lord, take father into heaven; but as to Philip, do as you please." I leave Patterson in your hands.

If it were not for a debt that Philadelphia owes to Boston we would, perhaps, not be gathered together to-night to celebrate the debt which *you* owe to Philadelphia,—the debt of gratitude that we all owe, and affectionately acknowledge, to our common alma mater, now the University of Pennsylvania, but originally the Philadelphia Academy, founded by Benjamin Franklin, who was born on January 17, nearly two centuries ago, a short distance from this spot.

That Franklin left Boston to go to Philadelphia need not be set down to his discredit. He was only seventeen years old, and even then gave evidence of the great common sense, that was his distinguishing characteristic, by passing through New York as rapidly as possible. A lad, who at seventeen had already had the discretion to be born in Boston, avoid New York, and settle in Philadelphia, was obviously destined to great achievements, and there is no cause for wonder that he became, long years before his death, the foremost American citizen, and a man who, as statesman, patriot, diplomatist, scientist, discoverer, inventor, journalist, and author, overshadowed nearly all his contemporaries. Even as a moralist he was the most practical and probably the most useful teacher of his day and generation, though his early practice appears to have left something to be desired. Perhaps this was the reason he left Boston. His religious views were heterodox, but after he reached eminence his life—both public and private—was so blameless that only once—in 1790, shortly before his

death—did any one venture to interrogate him as to his beliefs, and then it was a president of Yale College.

That was probably the beginning of the difficulties between Yale and Pennsylvania.

His first official connection with the University of Pennsylvania, as told by himself, illustrates his lack of orthodoxy. Persons of several religious sects had contributed to the funds of the University, and it had been arranged that the board of trustees should consist of one member of each sect. The Moravian member had made himself disagreeable to his colleagues, and when he died they determined not to have another of the same creed. Yet they did not want to give any of the remaining sects preponderance by electing a second person from any one of them. At length Franklin was mentioned as being "*merely an honest man* and of no sect at all," and this secured his election.

This much mention of Franklin seems incumbent upon any one who speaks to-night in this city and on the 193d anniversary of his birth, and especially upon any one who is representing what is perhaps—exclusive of his work in the establishment of our republic—the most beneficent and enduring result of all the labors of his long and useful life,—the University of Pennsylvania.

A great institution of learning is one of the most indestructible and imperishable of human foundations; and Franklin, who knew so well the history of Oxford and Cambridge and Leyden and Bologna, must have clearly seen the long years of usefulness that his little "Philadelphia Academy" was destined for. But even Franklin might, we may well suppose, feel surprised and overjoyed if now, a little more than a century after his death, he could see what that academy has become, could realize its present, and anticipate its future prosperity. Even so many-sided and versatile a man as he, who went through life, so to speak, with intellectual tentacles extending in every direction, and was a student himself to the day of his death, could scarcely discover a field of human thought or endeavor unrepresented in the present organization of the University.

If he desired to prosecute his studies in ancient languages (which he took up rather late in life), or in the history of the nineteenth century, which he did so much to influence, or in the working and development of the constitution of the country that he helped to upbuild, or in any of the thousand and one things that he loved to consider and discuss, he would find ample opportunity—and something like a thousand companions—in the departments of arts and of philosophy.

He was a book-lover, a book-buyer, and a book-collector all his life. The Philadelphia Library is a splendid monument of his belief

in the value of books to the general community. He would be glad to find that library prosperous and useful, but I can imagine that he would be even more pleased to know that at his "Academy," housed in a beautiful building and within easy daily reach of 3000 young men, at an age when the mere proximity or the atmosphere of books is useful, are 150,000 volumes, classified, arranged so as to be readily accessible, and absolutely at the service of every University student.

His medical beliefs were as heterodox for that day as were his religious opinions, and he would now have to renounce his well-known views as to the causation of both colds and fevers; but he would certainly be gratified to find the Medical Department, which, from the earliest days, was one of the strongest educational forces of the country, maintaining its position, and (while regardful of its ancient and honorable traditions) imbued with the progressive spirit of the age, improving its curriculum, broadening its clinical work, bringing its didactic courses within reasonable limits, providing—or trying to provide—increased laboratory facilities, and taking every possible step that would tend to bring into closer relation the teacher, the individual student, and the patient. As he was eminently practical, he would not be displeased to find that in spite of lengthening of course, increase of fees, advancement of educational requirements, and greater severity of examinations, the medical school now, as at the time of his death, has the largest classes gathered together on this continent.

He would find the collateral sciences of dentistry and veterinary medicine taught by strong faculties with the best equipment in America.

It is easy to imagine his delight at being able to continue his experiments on phosphorescence in the Harrison Laboratory of Chemistry, on the principles of ventilation in the Laboratory of Hygiene, on the Franklin stove, and the practical applications of heat and electricity in the Heat and Light Station, and to resume in the Flower Observatory that observation of the moon's eclipse which, being interrupted on an October evening, in 1743, by a northeast storm, led to his discovery of the true course of those storms on our North Atlantic coast.

He had various legal—and illegal—experiences, and he would certainly be interested in the plans for the new Law School building which brings that department to West Philadelphia, puts it in closer touch than ever with the University life, and gives it an unequalled equipment. This subject and that of the Law Library I must leave to Professor Patterson, who will, however, as assistant-district attorney of Philadelphia, be especially and personally interested in learning

that one of the books Franklin lost from his own library by lending, and later advertised, was Vol. II of "Select Trials for Murders, Robberies, Rapes, Sodomy, Coining, Frauds, and other Offences at the Old Bailey."

It certainly seems true, as one of his biographers has said, that "if we can imagine a circumference which shall express humanity we can place within it no one man who will reach out to approach it and to touch it at so many points as will Franklin." He would certainly take an especial interest in the provision for the physical health of the students. The man who prided himself in his youth on his swimming, his ability to carry in each hand a printer's "form" while his fellow-workmen could carry but one, who made athletic sports an integral part of his proposed curriculum for the Academy, would not only be glad to have "Franklin Field" named after him, but would join with us in our enthusiasm over the victories won on that and other fields by the representatives of Pennsylvania.

To find his "Academy" with a crew that had outrowed the best college crew in the country in record time; with a track team that had beaten all competitors with so much to spare that any two men on it might have been disabled without altering the result; with a foot-ball team that had lost but two games in five years, and with teams in base-ball, cricket, and all other manly sports not far behind these, would probably gratify Benjamin the sportsman as much as it would interest Benjamin the pedagogue to know that it had all been done by students in good academic standing. And then after all this Benjamin the father and guardian would be pleased to see the University dormitories, the finest specimen of college architecture in this country, and Houston Hall, incomparably the best students' club-house.

We shall have to let Benjamin go for want of time and strength, but not before showing him the last report of our most excellent Provost, and calling his attention to the fact that in spite of our prosperity we are in need of almost everything imaginable,—a gymnasium, a physical laboratory, a graduate school-building, a commons hall, more dormitories, a building for the School of Architecture, new medical laboratories, scholarships, fellowships, endowments, and money—money—money for the running of this enormous machine that has grown out of the miniature one that he devised and started.

And if he said that what we have is good enough, I'd tell him one of his own stories,—or the Provost would,—because when this stage is reached the Provost would probably assume the task of convincing him—as he does us,—often against our will—that nothing is good enough but the best, and plenty of it.

Franklin's story was told by him to illustrate his own difficulty

in trying to acquire habits of order. He said he made so little progress and had such frequent relapses that he often thought he'd stop, and be satisfied with his character as it was. And then, he says, he reminded himself of a man who brought his axe to a smith, who was one of Franklin's neighbors, and asked to have the whole face of it made as bright as the edge. The smith agreed to do it if the man would turn the grindstone. The job was long and hard, and every now and then the man came from the wheel to see how the axe was getting on. After a time he said he'd take it as it was. The smith said, "No, no! keep on. It will be bright if we stick at it; now it's only speckled." "Yes," said the man, "but I think I like a speckled axe best."

The Provost's work does not permit of any "speckled axes," and you may be sure that once in his hands, Benjamin would not have escaped without joining the great society of beggars for the University, to which society, I may say in conclusion, I would like to have the honor of proposing your names for active membership.

The following is an abstract of Mr. George S. Patterson's remarks:

Mr. Chairman and gentlemen of the New England Alumni, —I need not say to you what a great pleasure it is for me to be here to-night. It is always a pleasure to meet fellow-alumni, but particularly so in New England, richly endowed as it is with universities and colleges, and to find that even here there are some few who remember with affection and honor our alma mater. It is perhaps difficult for me to realize, coming from a city like Philadelphia, where every interest is bound up in the University of Pennsylvania, that some of you are not so familiar with what is going on at our University. Now when I say that every interest in Philadelphia is bound up in the University, I do not mean that there are not resident there many loyal alumni of Harvard, Yale, Princeton, and other institutions, but at the same time they are in the minority. Why, when a discussion is going on as to the merits of the different institutions, a discussion which happens quite frequently during the foot-ball season, you hear of "Harvard," "Yale," and "Princeton," but when it comes to the University of Pennsylvania she is called "The University." Carping critics have suggested that this is for the sake of brevity, but we prefer to think that it is because our University is "The University." But when I say that the interest of Philadelphia is bound up in the University it does not follow as a necessary corollary that the interests of the University are only local. The governing authorities have not displayed any tendency to localize the University. At the present time we have students from Africa, South America, China, Japan, Great Britain, France, Belgium, Holland, Germany, and thirty-seven of the

United States, and our influence is broadening every year. It must have been a student from that part of Great Britain commonly called Ireland who gave this answer in an examination paper. There is a rule of law that marriage and the subsequent birth of issue operate as a revocation of a will made before marriage, *pro tanto;* being asked to state this rule, the son of Erin replied, "Marriage and the subsequent birth of issue operates as a revocation of the marriage *pro tanto.*" The cause of morality may receive a distinct set-back when that young man practises his profession in Ireland. I often wish that some of the colonists who lived in 1750 could revisit the scenes of their labors, and compare the condition of the country then; the colonies huddled together on the seaboard with the ocean on the east, a wilderness, peopled with hostile savages, on the west, and the no less hostile French on the north, and the condition of the country to-day; and if Franklin would be gratified at the confirmation of his prophecy, made in 1787, "that the sun of the young republic was a rising and not a setting sun," would he not be equally gratified and amazed at the advance in the Academy, founded 150 years ago "for the education of youth and their instruction in the several duties they owe to the society in which they live." What would he say to the Laboratory of Hygiene, the Wistar Institute, and the Departments of Archeology and Paleontology? Fancy his amazement at finding Dr. White, knife in hand, about to operate before an admiring audience of 300 persons, might he not say, "Murder is committed in this community with impunity and before an admiring audience."

It is impossible for me to describe in detail the work that is being done in the different departments; time, the breadth of the subject, and my own limitations forbid. I do wish, however, to say a few words about the Law School, the department with which I have the honor to be connected. The Law School is the oldest one in the United States, founded in 1790, and had among its first professors James Wilson, a member of the Constitutional Convention and afterwards an associate justice of the Supreme Court of the United States. When the University was moved to West Philadelphia the Law School accompanied it, where it remained until 1888, when it was removed to one of the large office buildings in the city. The accommodations there proving inadequate, in 1895 it was moved to a building, generously tendered by the city of Philadelphia, within a stone's throw of Independence Hall, but it does not propose to stay there. It is proposed to raise a fund of $360,000, and erect a building at Thirty-fourth and Chestnut Streets, near the University, which building shall not only be the largest law-school building in the world, but also the one best adapted for the purpose. It is perfectly true that as "clothes do not make the

man," neither does a law-school building make a law school, but I feel sure that the alumni of the University can be satisfied with the work that is being done there. As you know, perhaps, there are two systems of legal instructions, the text-book system, which is purely didactic, and the case-book system, which is clinical, if I may use that expression. The first system tells the student what the law is, the second one compels the student to investigate the source of law,—that is, the cases,—and trace the historical development of any legal doctrine, and it is particularly fitting that a reference to this latter system should be made at this dinner, for its inventor was a Harvard professor, and we have with us to-night one of the most distinguished exponents of that system, in Professor Beale, of Harvard. This system is the one used in most of the courses in our Law School.

And now a word as to athletics. Many sincere friends of inter-university athletics have thought for some time that there were so many abuses in such athletics that their abolition was only a question of time. I do believe that there are certain abuses; that the tendency is to unduly magnify their importance; that entirely too much stress is placed upon winning games; that it is not recognized that it is just as honorable and just as good sport to be beaten as to win. But I do not believe that the ultimate result of such athletics is harmful, and I am firmly of opinion that he who does his work faithfully in his University will be the better off, mentally, morally, and physically, for having taken part in such athletics, and I speak as one who has twenty years' experience in different forms of athletics and does not regret it.

In conclusion, can we not say that the hope has been fulfilled which is so quaintly expressed in our original charter that, "through the favor of almighty God, this Academy may prove a nursery of virtue and wisdom, and that it will produce men of dispositions and capacities beneficial to mankind in the various occupations of life; but more particularly suited to the infant state of North America."

The General Alumni Society Scholarship Foundation.

A fund of $100,000, to be known as "The General Alumni Society Scholarship Foundation," has been established by the Board of Directors of the General Alumni Society, University of Pennsylvania. This sum provides for the establishment of sixteen scholarships in the different departments of the University, and is intended to lighten the increasing burden of granting free scholarships. The president and treasurer of the society are the trustees of the fund for the time being.

These scholarships are known as the General Alumni Society Scholarship, and are assigned among the several departments of the University, as follows: Eight in the college, four in the medical, two

in the law, and one each in the dental school and department of veterinary medicine.

In all cases, the scholarship will be awarded by competitive examinations and are available for a full course in the department named, or for the completion of a course, should the incumbent enter in advanced standing. It is provided that in no case shall a scholarship be transferred from one department to another, and an incumbent failing to retain his standing in the advancement of his class shall forfeit his scholarship.

The scholarships assigned to the college are not available for post-graduate courses, provision having been made already for that course by the George Leib Harrison foundation, which is the largest foundation established at the University, amounting to $500,000.

According to the terms of the foundation the scholarships will become operative as the fund becomes sufficient to provide the necessary income. The general Alumni Society has agreed to pay the expense of No. 1 scholarship annually until the principal sum is sufficient to provide for it.

Provost Harrison in his recent annual report urged the necessity of aiding the University in supplying education free. In writing his approval of the statement of the foundation he said: "To have this responsibility shared by the alumni is grateful to us all, not only for the relief which the University will have thereby, but because of the new interest which the general Alumni Society is taking in the work of the University, which is the work of all of us."

Dr. J. M. Da Costa elected a Trustee of the University of Pennsylvania.

At a recent meeting of the Board of Trustees of the the University of Pennsylvania Dr. Jacob M. Da Costa was elected a member of that body. Dr. Da Costa was born on the island of St. Thomas, West Indies, in 1833. He received his classical education in Germany. He was graduated in medicine from the Jefferson Medical College, and subsequently studied in Paris and Vienna. He became a lecturer on Clinical Medicine in Jefferson College in 1864, and in 1872 he was appointed to the chair of the Theory and Practice of Medicine in that institution.

Hamilton Walk.

The Trustees of the University have decided to call the improved portion of Pine Street Hamilton Walk. The name was selected in honor of James Hamilton, a conspicuous figure in later Colonial and Revolutionary days, who owned the property now included in Wood-

lands Cemetery and the University grounds, and who was also a trustee and president of the University Board.

The E. Otis Kendall Memorial Scholarship.

The Board of Trustees of the University has established an E. Otis Kendall Memorial Scholarship, in honor of the late vice-provost and professor of mathematics.

Appointment.

Dr. David Riesman, of the Class of '92, has been appointed by the Board of Trustees of the Philadelphia Polyclinic and College for Graduates in Medicine professor of Clinical Medicine.

Necrology.

Dr. Robert P. Harris, of the Class of '43, died in Philadelphia on February 20, 1899. He was widely known as a medical writer and statistician.

Dr. Daniel M. Tindall, of the Class of '39, died at Morton, Delaware County, Pa., on February 21, 1899.

The True Business of the Doctor.

"There is one part of their business that certain medical practitioners are too apt to forget,—namely, that what they should most of all try to do is to ward off disease, to alleviate suffering, to preserve life, or at least to prolong it if possible. It is not of the slightest interest to the patient to know whether three or three and a quarter inches of his lungs are hepatized. His mind is not occupied with thinking of the curious problems which are to be solved by his own autopsy, whether this or that strand of the spinal marrow is the seat of this or that form of spinal degeneration. He wants something to relieve his pain, to mitigate the anguish of dyspnea, to bring back motion and sensibility to the dead limb, to still the tortures of neuralgia. What is it to him that you can localize and name by some uncouth term the disease which you could not prevent, and which you cannot cure? An old woman who knows how to make a poultice and how to put it on, and does it *tuto, cito, jucunde,* just when and where it is wanted, is better—a thousand times better in many cases—than a staring pathologist who explores and thumps, and doubts and guesses, and tells his patient he will be better to-morrow, and so goes home to tumble his books over and make out a diagnosis."—Oliver Wendell Holmes.

EDITORIAL.

DIGITOXIN.

According to Schmiedeberg, digitalis leaves contain at least five principles, all of which are nitrogenous, and all of which, with the exception of digitoxin, are glucosides. They are: *digitoxin*, *digitalin*, *digitalcin*, *digitonin*, and *digitin*. According to Brunton digitonin has an action like that of saponin, and digitin appears to be inert. Of the first three digitoxin probably has the most powerful action on the circulatory system, and represents most fully the virtues of the crude drug. The crystallized digitaline, for the discovery of which Nativelle obtained the grand prize of Orfila, is composed chiefly of digitoxin (Brunton). The latter principle, as prepared by Merck, appears in the form of a white crystalline powder, of an intensely bitter taste, and insoluble in water, but freely so in alcohol.

Masius (*Bulletin de l'Académie royale de Médecine de Belgique*, No. 6, 1894) states that he has employed digitoxin extensively in the treatment of cardiac diseases, pneumonia, and typhoid fever, and that its action is prompt and decided. It rarely causes any gastric disturbance. Within from twelve to twenty-four hours there is a marked improvement in the pulse, and diuresis is induced, the daily amount of urine, in some instances, reaching several quarts.

Vatin (*Gazette hebdomadaire de Médecine et de Chirurgie*, April 5, 1896) has also investigated the action of digitoxin in diseases of the heart, and finds that it produces slowing and regularity of the pulse, diuresis, and improvement in respiration. Only in occasional instances does it cause nausea and vomiting.

Corin (*Therapeutische Wochenschrift*, August 11, 1895) claims to have had excellent results with the drug in croupous pneumonia. He employed it systematically in 216 cases, and no unfavorable symptoms or cumulative action was noticed.

Wenzel (*Centralblatt für innere Medicin*, May 11, 1895) employed digitoxin in a number of cases of valvular disease with disturbed compensation and observed vomiting in only two cases. The effect on respiration, pulse, quantity and specific gravity of the urine was very pronounced, even in cases in which other remedies, including digitalis, had been tried in vain.

Von Starck (*Münchener medicinische Wochenschrift*, January 26, 1897) also reports a series of fourteen cases in which he was favorably impressed by the action of digitoxin. The drug was given by the mouth in all cases, and was well borne, except in one instance, in which the pulse fell to 46 per minute. In no case were the symptoms of gastric irritation sufficiently marked to necessitate any other method of administration.

In alluding to Nativelle's digitaline, which is said by Brunton to consist chiefly, if not entirely, of digitoxin, Balfour, in his monograph on "*The Senile Heart*," says, "Twenty years' experience enables me to say that it is now, and always has been, a thoroughly reliable and active drug. One flaçon containing sixty granules in two months' time produces quite a decided difference in the heart-beat of those to whom they have been administered.

One granule (one-quarter of a milligramme) every night at bed-time is a perfectly sufficient dose to produce this decided tonic effect on the heart, and such a dose may be continued as long as may be thought necessary. Now and then a larger dose seems indicated, and one granule may be given every twelve hours, but except in bulky or plethoric individuals so large a dose as this is rarely long tolerated. To give more than two granules in the twenty-four hours is almost certain to induce speedy intolerance of the drug, and as a rule violent sickness."

In discussing the treatment of aortic disease Clifford Allbutt writes: "In a case to which I was called in consultation three or four years ago, Nativelle's granules were used by the medical man in charge of the case, one of dilated heart; these proved so helpful that I have prescribed them occasionally since that time, and certainly can confirm my friend's good opinion of the preparation."

It is evident, from the above testimony, that we have in digitoxin, if not a perfect substitute for digitalis, a remedy of great value, tolerably free from the untoward effects of the crude drug, convenient of administration, and one that may be used with great advantage when the liquid preparations of digitalis are not well borne. Digitoxin may be administered by the mouth, by the rectum, or hypodermically. The dose by the mouth is from $\frac{1}{250}$ to $\frac{1}{125}$ of a grain, thrice daily, by the rectum $\frac{1}{100}$ to $\frac{1}{80}$ of a grain.

MEDICAL PROGRESS.

MEDICINE.

UNDER THE CHARGE OF

JAMES TYSON, M.D.,

ASSISTED BY

M. HOWARD FUSSELL, M.D., AND A. O. J. KELLY, M.D.

Clinical Aspect of the Plague in Bombay.

Lewin (*Vratsch*, No. 21, 1898; *British Medical Journal*, December 10, 1898) describes the following characteristic symptoms of the plague in Bombay: (1) Facies pestica,—the sudden exhaustion and weakness at the commencement of the illness are apparent in the facial expression, which is that of a sleeper with the eyelids lowered and the wrinkles smoothed out, and exhibits deep apathy and an absolute indifference to the surroundings. No other fever at its commencement—even on the very first day—is characterized by such extreme debility. (2) The tongue is swollen, showing the impression of the teeth on its edge; it is moist and is not tremulous. It is completely covered with a thick, moist, white fur (*langue nacrée* of Bulard), not met with in any other disease, generally present on the first day, and lasting for two or three days. (3) Lewin was not able to observe the alteration in speech mentioned by others, as he was not acquainted with the native dialect. (4) Psychical troubles are characteristic signs of the plague; the systematic and obstinate "fixed ideas" are for the most part of a depressive character. At the height of the malady the sense of weakness disappears, and the patients rise in bed or even get up. (5) Sclerotic injection: There is generally great pericorneal injection, without actual effusion of blood, and therewith an acute conjunctivitis, or much more rarely keratitis, iritis, or panophthalmia. (6) Buboes: In this epidemic carbuncle and petechiæ were infrequent. The buboes appeared very early, and were often well developed at the beginning of the second day. A disproportionately large inflammatory swelling surrounded those affecting the inguinal, and was even more marked round the preauricular, glands,—parotitis pestica,—on account of the edema of the glottis liable to supervene, was one of the most dangerous symptoms of the plague. (7) The inflammation of the lungs closely resembled commencing influenza, and was without well-marked local signs; plague bacilli in the sputum were characteristic. (8) Plague gangrene occurred, generally during early reconvalescence or later; the ulcers seldom affected the favorite seats of bedsores, and had perpendicular margins not undermined. (9) Buboes, which opened spontaneously, were followed by deeply retracted cicatrices and persistently discharging fistulæ. Lewin strongly recommends the early incision of buboes, as the undermining of the skin by the pus may attain enormous proportions. (10) Pestis ambulatoria: Some cases are extremely slight, marked

only by a little rise in temperature and a little pain in the inguinal region and armpit, but these cases are very dangerous in spreading the disease. (11) During convalescence psychoses of a depressive character, amounting sometimes to absolute stupor, may last from ten to fifteen days. Lewin explains them as due to inanition, the result of a specific poison produced by the plague bacillus.

Splenomegalia with Hepatic Cirrhosis.

Banti (*Ziegler's Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie*, Band xxiv, Part I, 1898) makes an exhaustive report of the disease first described by himself, and frequently spoken of as Banti's disease. It is especially common in young persons and adults. Its cause is unknown. He recognizes three stages: (1) The anemic, in which, with the development of a splenic tumor, similar to that of leukemia, there develops oligocythemia, with poikilocytes and microcytes, and oligochromemia; sometimes attacks of fever. This stage persists three to five years, even ten or eleven years. (2) The transitional stage, in which the urine is scanty, and in which icterus and gastro-intestinal manifestations develop. This stage lasts a few months. (3) The ascitic stage, in which there occur a gradual and painless accumulation of citron-yellow fluid in the peritoneal cavity, diminution in the size of the liver, fever, and augmentation of the previous symptoms. This stage lasts five to seven months, and is followed by death. The necropsy reveals a splenic tumor; in the appropriate stage, ascites; in the first stage, no liver alterations; in the second, slight cirrhosis; in the third, well-developed Laennec's cirrhosis with its sequelæ; in the splenic and hepatic veins, atheromatous alterations. Microscopically, there are marked thickening of the splenic reticulum in the pulp and Malpighian bodies, with hyaline degeneration; marked sclerosis proceeding from the arterioles, and proliferation of the endothelium of the splenic veins. The microscopic picture of the liver cirrhosis is that of the alcoholic variety, not attaining, however, the highest grades of the latter. The medulla of the bones has fetal characteristics. Bacteriologic investigations yield negative results. Therapeutically, transitory improvements follow the administration of preparations of arsenic. Early removal of the spleen, in two cases, was followed by cure. This procedure is consequently recommended in the first and second stages of the affection. In the differential diagnosis, it is mentioned that splenic anemia sometimes occurs without hepatic cirrhosis, and associated with hypertrophy of the lymph-glands. Banti believes that the disease results from the chronic intoxication of the system by some poison produced by the spleen.

The Reaction of Syphilitic Blood to Mercury.

Kuperwasser (*Archives des Sciences biologique de l'Institut impériale de Medecine expérimentale à St. Petersbourg*, Tome vi, No. 4, 1898; *British Medical Journal*, January 7, 1899), instead of comparing syphilitic and non-syphilitic blood directly, with a view to determining what modifications the former undergoes during the disease,—a method which has always yielded negative or contradictory results,—has investigated the changes which occur in healthy and syphilitic blood after the administration of mercury. He classifies the white corpuscles, which, according to Ouskoff, all arise from one and the same

element,—namely, the small mononucleated lymphocyte, into (1) young, (2) mature, and (3) old leucocytes. The writer then shows (1) the blood of healthy people is modified by mercury in the following direction: The proportion of young leucocytes present is considerably increased and that of the old diminished; (2) the blood of syphilitics reacts to mercury by a considerable diminution in the proportion of young, and a corresponding increase in that of old leucocytes. This reaction is independent of the stage of the disease, and takes place whether there are at the time any syphilitic manifestations or not, and also whether the patient has or has not previously been subjected to specific treatment of mercury and iodides. Those who have undergone treatment by mercury within four months of applying the blood-test form the only exception to this rule. In such cases the reaction of syphilitic is replaced by that of healthy blood, possibly because the patient still retains a considerable quantity of mercury, or because under its influence the disease has become so attenuated that the blood gives a normal reaction. Kuperwasser believes that this reaction, based on the observation of forty-eight cases, will prove to be one of the most certain methods of diagnosing syphilis, and suggests that many disputed points, such as the relation of those diseases called by Fournier "parasyphilitic" to syphilis, might be solved by its general application.

Addison's Disease during Childhood.

Dezirot (*Journal de Médecine*, August 28, 1898) has collected records of forty-eight cases of Addison's disease occurring during childhood, thus indicating that the affection is hardly so uncommon in that period of life as has been supposed. The youngest child was aged 7 days, the eldest 14½ years. The affection, which is almost invariably due to tuberculosis, is usually first manifested by very vague symptoms, such as weakness, anemia, loss of weight, gastro-intestinal symptoms, nausea, vomiting, diarrhea. Pain and pigmentation are quite uncommon in children. Convulsions are usual, intermissions frequently occur, and the disease pursues a more rapid course than in adults. Extract of suprarenal gland yields fair results in the treatment.

Unilateral Exophthalmic Goitre.

Armaignas (*Gazette hebdomadaire*, No. 92, 1898) presented at a meeting of the Société de Médecine de Bordeaux a girl with left-sided exophthalmos and enlargement of the right side of the thyroid. The right eye was normal, and the left side of the thyroid unaffected. The pulse frequency was 120 to 150 per minute.

Bronchial Asthma.

Talma (*Berliner klinische Wochenschrift*, No. 52, 1898), as a result of clinical observation, comes to the following conclusions: (1) The spasm of the respiratory passages may be produced voluntarily by the majority of asthmatic patients and by many normal individuals; (2) almost all asthmatics can control the spasms even during an attack, but certainly during the periods of remission; (3) the muscles of the respiratory passages are either under the control of the will or may be brought under such control. As a consequence of these con-

clusions, the importance of respiratory gymnastics for asthmatics is patent. The number of respirations per minute must be reduced, and the expirations performed slower and more completely. The spasm of the muscles will thus be controlled. The speech must be regulated, and while speaking the patient must inspire slowly and deeply. The asthmatic must learn to maintain the proper tension of the muscles of the neck, chest, and abdomen.

Pericarditis Callosa.

Galvagni (*Clinique moderne*, An. iv, No. 341) narrates under the above title three cases of chronic fibrous pericarditis. Particular stress is laid upon the difficulty in diagnosis, which is likely due to the fact that the affection commonly comes on insidiously during childhood. The first symptoms are usually indications of cardiac obstruction, and these develop themselves after a period of more or less robust health. When the affection has made considerable progress, there are present small, regular pulse, facial cyanosis without marked edema of the lower extremities, and full and tortuous jugular veins without pulsation. Despite this evident venous stasis, the right ventricle does not always show indications of dilatation. The area of cardiac dulness and the apex-beat are completely fixed,—that is, they do not vary with the assumption by the patient of the lateral position. The cardiac sounds are weak, and the second sound may be accentuated. Systolic retraction of the precordium may not be present, nor may the pulsus paradoxus and inspiratory swelling of the cervical veins be evident. A congestive cirrhosis of the liver may supervene, and this lead to ascites. The large vessels, particularly the arteries, are often narrowed, and this is probably dependent upon the length of the disease, starting during childhood, and the diminution in size of the cavities of the heart.

Chronic Articular Rheumatism during Childhood.

Delcourt (*Revue mensuelle des Maladies de l'Enfance*, July, 1898) states that chronic, deforming, articular rheumatism is uncommon during childhood, and that he has been able to collect but thirty-eight cases in the literature. He reports the case of a girl, aged 4½ years, in whom the affection began insidiously with vague pains in the muscles and joints. The small joints of the hands and feet then became swollen, and at the end of six months she was unable to walk. At the end of two years, during which time there was gradual progression of the disease, the patient died, as a consequence, as revealed by the necropsy, of acute osteomyelitis. The joints were found in the condition of fibrous rheumatism (Jaccoud), and this is the more common form in children. Delcourt, with Strümpell, distinguishes two stages of the affection,—chronic arthritis with localization of the diseased process to the synovial capsule, and the periarticular tissues; the second results from the first, by the extension of the process to the cartilages and the bone. Heredity is thought to play some *rôle* in the causation of the disease; its exciting factor being, however, rather defective nutrition. In contradistinction to some authors, Delcourt believes that there exists a certain antagonism between scrofulous tuberculosis and this rheumatic affection,—that is, they rarely occur together. In the differential diagnosis there are to consider white swelling, gout (seldom in children), and arthritic affections, occurring during the course of certain infectious diseases. The most common complications are chronic pleuritis and pericarditis, and

these developed in the case reported. The most appropriate treatment, considering the progressive tendency of the affection, consists in proper hygiene, the internal administration of sodium salicylate, arsenic, iodine, and externally, baths, electricity, and massage.

Typhoid Fever and Insanity.

Paris (*Archives de Neurologie*, August, 1898) narrates the case of a woman, aged 44 years, who had been insane for several years with ideas of persecution and grandeur. During the subsidence of an uncomplicated attack of typhoid fever the insane ideas became less manifest and less fixed. The patient suffered a relapse of typhoid fever with severe symptoms, and upon its subsidence she seemed perfectly sane. As the case had been regarded incurable, the amelioration was considered temporary only, and the patient was confined in the asylum for some months longer. At the end of three years, however, she was still entirely sane.

Hyvert (*Ibid.*) narrates the histories of three cases of insanity in which typhoid fever occurred. Two of the patients, both women, aged 20 years, completely recovered from their insanity. The first had suffered from acute mania for two months, and the second had been weak-minded, and had had hallucinations and insane ideas.

Stokes-Adams Disease.

Petrucci (*Gazzetta degli Ospitala*, September 11, 1898; *British Medical Journal*, December 31, 1898) records a case of this condition. The patient was a country laborer, aged 52, whose family history was negative. At 17 years of age he had suffered from slight malarial fever. In 1890 he suffered from influenza for about a week; three years afterwards he felt, on returning from work one day, a sensation of *malaise* and extreme prostration, with a feeling of constriction of the chest and dimness of vision. These symptoms were followed by marked frontal sweating. The following day he returned to work, still feeling somewhat weak. The following year he suddenly suffered from severe attacks of syncope, with feeling of oppression. For some time he was liable to similar attacks, together with vertigo, and some vomiting. On being seen by the author he was found to have a pulse-rate of 14 in a minute, with some slight irregularity, and even occasional intermittence, on the occurrence of which the patient suddenly became pale, and seemed about to faint. On physical examination nothing else of a definite nature was revealed, except some slight pulmonary emphysema. The cardiac apex was in the fifth space, and the sounds somewhat indistinct though free from murmurs. The urine showed nothing abnormal, except that chlorides seemed to be deficient. While under observation the average pulse-rate showed the minimum to be 14 beats, the maximum 24 per minute. Some months afterwards the patient died suddenly, apparently from syncope. On post-mortem examination (made under difficulties) a considerable degree of atheroma of the right carotids and coronary arteries was present. The myocardium was pale, and showed foci of chronic myocarditis. The valves were all competent, but showed patches of atheroma on the cusps. The medulla could not be examined. The diagnosis made by the writer was Stokes-Adams disease, a condition to which attention has been drawn more particularly of late years. Its symptoms consist chiefly in those described

above. The writer has collected details of the majority of cases described up to the present. Ii would seem from these that there is a difference of opinion as to the lesions present. According to some, the prevailing condition is fatty degeneration of the myocardium accompanied more or less by atheromatous change in the coronary arteries, and general arterio-sclerosis. On the other hand, some are of opinion that the disease is a neurosis, or possibly due to a disease of the vagus, either nuclear or peripheral. It has even been supposed that the two conditions may be combined,—that is to say, that the vascular tissue causes certain nutritive alterations in the medulla, especially the important centres in the floor of the fourth ventricle. The duration of the disease is uncertain, apparently in some instances a few weeks, in others as long as a year. The writer quotes even a lower pulse-rate than that recorded by himself. As to treatment there seems little that can be done. Injections of caffeine, strychnine, and other cardiac tonics have been tried by the writer. In all cases careful dieting is of great importance.

Morphologic Alterations of the Heart in Chlorosis.

Gautier (*Deutsche Archiv für klinische Medicin*, Band lxii, Parts I and II, 1898) states that, as a result of clinical observation, he believes that in chlorosis the relative cardiac dulness is regularly increased in extent, and that this is a consequence of a real increase in the size of the heart, and not due, as supposed by some, to retraction of the edge of the lungs. The cause of this cardiac hypertrophy and dilatation is thought to repose in the nature of the chlorosis itself. With improvement of the chlorotic condition this pathologic alteration of the heart disappears.

Diabetes Mellitis in a Ten-Year-Old Girl.

Haushalter (*Annales de Médecine et Chirurgie infantiles*, No. 13, 1898) reports a most unusual case of diabetes in a young girl aged 10 years. The glycosuria amounted on an average to about 122 grammes of sugar a day, during an irregular observation of seven months. Polyuria was not excessive. The subjective manifestations consisted of thirst and polyphagia, which were not marked. Various abscesses developed on the lower extremities, the disease progressed, the child became marantic, and died at the end of about two years, despite all treatment.

Syphilitic Encephalopathia.

Roux (*Annales de Médecine et Chirurgie infantiles*, No. 13, 1898) reports the case of a child affected with hereditary syphilis. It was five years of age, has just begun to speak, and was otherwise much retarded in development. At the age of three years it became affected with some cerebral affection that manifested itself particularly by convulsive seizures after the type of Jacksonian epilepsy. These recurred at regularly monthly intervals. Under the continued administration of the bromides there was no response. The exhibition of potassium iodide, in doses of one gramme daily, however, was followed by marked amelioration, and for the past four months there had been no attacks. The mother acquired the syphilis from a child other than her own, a chancre being produced on the breast. Following this infection she had given birth to three syphilitic children and had aborted once.

Pathogenesis of Elephantiasis.

Bayet (*Journal médical de Bruxelles*, No. 41, 1898) states that such affections only should be considered elephantiasis in which the skin and subcutaneous connective tissue become hyperplastic; congenital lymphangiomas, etc., should be excluded. Elephantiasis is considered not a disease *sui generis*, but a symptom that may result from three conditions: (1) Elephantiasis follows some infections of the skin, especially such as implicate the lymphatic vessels. Sometimes a cicatrix of a previous wound is demonstrable. The subsequent course of the affection is not dependent upon the primary cause. (2) In the tropics, the filaria sanguinis hominis is to be looked upon as the most common cause of the disease. (3) Elephantiasis may also result from venous congestion, occurring in the course of cardiac or renal disease. In the latter cases an infection cannot always be excluded.

Malarial Pulmonary Congestion.

Leques (*Revue de Médecine*, July, 1898) describes a form of pneumopaludism that commonly affects both apices of the lungs, and suggests commencing pulmonary tuberculosis. It is to be distinguished from the latter, however, by its shorter course, and consequent better prognosis. At times it remains stationary, despite well-directed therapy, and leads to sclerosis. It is suggested that the discovery of the malarial parasite in the sputum will be of assistance in the diagnosis. Leques was able to detect the malarial hematazoon in the sputum of the patient whose case he reports, and, as far as is known, this is the first time that such discovery has been made.

Cerebral Disturbances in the Course of Whooping-Cough.

Schreiber (*Archiv für Kinderheilkunde*, Vol. xxii, Parts I and II, 1899) describes a case of whooping-cough in a two-year-old female, who was seized with inability to move any of her extremities immediately after a severe attack of coughing. She also had incontinence of urine and feces. There was paresis of the right side of the face. After this each attack of coughing was accompanied by general convulsions.

There was high fever. The child gradually recovered. The diagnosis was a meningeal hemorrhage.

The author has collected thirty-eight cases from the literature in which there was a cerebral hemorrhage. Ten of these were fatal, and sections were performed in these cases.

In the majority of cases they recover, but they may be followed by various nervous disturbances. Treatment of the condition is of little avail.

Atriplicism.

Matignon (*Medical Reports of Chinese Maritime Customs*, 1898; *British Medical Journal*, December 3, 1898) gives an exhaustive account, illustrated by the records of twelve cases, of a form of food-poisoning which he has named "atriplicism." It is produced by the consumption of the shoots of a kind of spinach (atriplex serrata). It appears to arise only in people, especially beggars, who eat the herb uncooked and without being washed. It may, therefore, be due to toxic products secreted by a minute parasitic insect, colonies of which are often found at the top of young shoots. The disease is more common in

women than in men, perhaps owing to their weaker condition, and is met with only in the months of May, June, and July, when the herb is edible. The symptoms come on within ten to twenty hours of the ingestion of the shoots. The first stage, which takes from fifteen to twenty hours to develop and lasts for from three days to a week, is that of infiltration. It commences, as a rule, with a painful numbness, perhaps associated with formication of the hands. Edema soon supervenes, with irritation and often cyanosis of the nails and finger-tips. The distribution of the edema is curious and characteristic; it is limited to the hands, forearms, and face. On the forearms it affects the anterior and postero-external portions only, in direct contravention of the laws of gravitation; the elbow is free. The face aspect is even more swollen than in Bright's disease, and is of an earthy color. The hands are practically useless from the swelling and pain, their tactile sensibility is diminished, but that to heat and light is greatly increased, so that cases may be diagnosed by the way in which they are wrapped up for protection from the sun's rays. There is no albumen in the urine, the pulse is slow, sometimes as infrequent as 52 per minute, and the temperature may be subnormal. The next feature of the disease is the formation of ecchymoses on the affected areas, probably from rubbing and scratching. These ecchymoses vary in size, but they almost always ulcerate. During this stage the patient's general condition is worse, and there may be slight fever. In fairly healthy subjects this is followed by mere epithelial desquamation and resolution, but in those who are debilitated the ulceration is very persistent and terminates in cicatrization, often with the formation of cheloid. No complications are recorded except that in one case the disease was followed by dry gangrene of the fingers. The treatment consisted in a saline purge during the first two days of the disease. With regard to the pathology of the affection, the author considers that it is a local action of the poison resembling somewhat erythromelalgia but more closely Raynaud's disease. It is like the latter complaint in its sexual incidence, the parts affected, and many of the symptoms; on the other hand, atriplicism spares the feet, and is not limited to young subjects, nor is it intermittent in its occurrence, as is Raynaud's disease. Laveran suggested that it was due to actual contact with the herb, since the exposed parts are alone affected, but Matignon has succeeded in disproving this by actual experiment in healthy subjects.

Woillez's Disease,—Acute Idiopathic Pulmonary Congestion.

Carriere (*Revue de Médecine*, October, 1898; *British Medical Journal*, February 4, 1899) contributes an exhaustive article on Woillez's disease, or idiopathic pulmonary congestion. This is an acute affection of the lungs following rapidly on simple exposure to cold, or in some cases resulting from traumatism, as in falls or blows causing injury to the chest. The symptoms appear from four to seven hours, or even less, after exposure. In some instances quoted by the author twelve to fourteen hours elapsed before the appearance of slight rigors, which, together with the sharp pain in the side, constitute the earliest symptoms. The severe and prolonged rigor which may usher in an acute pneumonia is never observed in this disease. The slight rigors may last three or four hours. The temperature rises fairly rapidly from the beginning, and may soon attain 40.5° C., the pulse being 120 to 130. There is much thirst and complete anorexia. Dyspnea may be a marked symptom later on, but in the early stages is not severe. There is slight cough, which becomes irritable.

Expectoration is slight. When the disease is fully developed, the pain in the side becomes more marked. On physical examination the affected side of the chest may appear, on inspection, increased in size,—a fact to which Woillez first drew his attention,—though it does not seem to be invariably present. Movement seems to be deficient. On palpation, vocal fremitus is much diminished as a rule, and, on percussion, there is some impairment of resonance, but indefinite in outline. There does not seem ever to be actual dulness. Expiration is prolonged and inspiration somewhat interrupted. The vesicular murmur is distant; in some cases, however, it is increased, assuming the puerile type, a few crepitant and subcrepitant râles may be heard. Bronchophony is rare, but a symptom described by Serrand—to which the name echophony has been applied—is present,—namely, a form of echo immediately following vocal sounds. The disease appears to consist in an acute unilateral or local pulmonary congestion. Its duration, according to the cases quoted by the author, varies from two to four or five days, and in some instances relapsing. The majority of cases recover, though occasionally the disease may end fatally. Bacteriological examination of the sputa shows the presence of staphylococci, and occasionally pneumococci of Fränkel. Post-mortem examination simply shows acute congestion of the pulmonary tissue without consolidation. The blood expressed from the lung shows the presence of the same organisms as noted in the sputum, and sections of the organ show the same. Treatment is merely symptomatic; dry cupping and poultices usually relieve the pain rapidly, and quinine may be administered internally.

Polyneuritic Brachial Paraplegia.

Menz (*Berliner klinische Wochenschrift*, No. 24, 1898) reports the case of a man, aged 42 years, ill with pulmonary tuberculosis, who had had malaria, and been exposed to the inclemencies of the weather. He was suddenly affected with intense pain and paralysis of the left arm. After the lapse of several months, during which time the condition of the left arm improved somewhat, the right arm became similarly affected. The case was then recognized as one of those rare instances of polyneuritis of the brachial plexus. Menz notes that two similar cases, occurring in the course of pulmonary disease, have been reported,—that of Heyse, a tuberculous patient, and that of von Krafft-Ebing, said to have been a post-pneumonic polyneuritis.

Amnesia after Excitement.

Fere (*Belgique médicale*, July 7, 1898) states that amnesia and other disturbances of memory may supervene in persons ill with disturbances of the nervous system or in those hereditarily predisposed, after injuries, excessive exertion, and even after coitus; and that they may also follow pure psychic disturbances either immediately or after the patient has been exposed to them for some time. He reports the case of a woman, who had never been ill with any nervous affection, and who resided with a sister whom she loved very much. The latter became ill, and was nursed by the other with great diligence and care. The sister, however, died. The other remained apparently normal, until the corpse was being removed from the house, when she suddenly lost all recollection of her sister. She remained in this condition several weeks, at the end of which time the recollection returned suddenly in a dream.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

ASSISTED BY

CHARLES H. FRAZIER, M.D., AND GEORGE M. PURVES, M.D.

Surgical Experiences with Soluble Metallic Silver in the Treatment of the Septic Infection of Wounds.

Dr. Oscar Werler (*Deutsche medicinische Wochenschrift*, October 6, 1898). Of the many drugs that have in recent times been recommended for use in surgery very few stand the practical test as well as the citrate and lactate of silver.

The most interest attached to them is the very valuable and as yet unique quality of the non-poisonous antiseptic, of penetrating the entire organism, and effecting a general disinfection of the whole body.

The results obtained by Credé were in every respect encouraging, as they show that soluble silver has a decidedly beneficial influence, and often effects a rapid and ever-surprising cure in fresh cases of septic infection, and even does so in chronic or creeping sepsis and furunculosis, when the treatment is begun in time and before secondary changes in vital organs have occurred.

The author cites three cases of septic disease, representing three classes: (1) Acute sepsis; (2) chronic septic infection; and (3) multiple chronic furunculosis.

All three progressed most favorably under the administration of the inunction and the washing of the wound with 1 to 4000 citrate-of-silver solution.

The author believes the favorable results to have been attained by the direct use of inunctions of silver salve, as proposed by Credé.

He sums up his experience in the following conclusions:

(1) In soluble metallic silver we possess a valuable remedy for the successful treatment of blood-poisoning caused by septic infection, when the diagnosis is made correctly, and while secondary affections are still absent.

(2) The method of the intense silvertherapy is suitable for both acute and chronic sepsis and for furunculosis.

(3) It is most energetically exhibited by means of inunctions, with the unguentum Credé, in which, by cutaneous absorption, the medicament is directly introduced into the circulation.

In the blood the formation of the powerfully bactericide silver salts effects a general antisepsis and a disinfection of the entire organism.

Experimental Researches and Experiences concerning Infiltration Anesthesia.

Dr. H. Braun (*Archiv für klinische Chirurgie*). Anesthesia may be purely mechanical; or it may be partly mechanical and partly due to the paralyzing influence of the material employed; or, finally, it may be a true regional anesthesia due to the specific action of the agent used upon the terminal nerve-filaments.

The result of especial interest was obtained with the chemical substances, known as local anesthetics, in which the paralyzing action of the drug upon the nerve-filaments greatly exceeds the irritant effect, or in which the latter is altogether absent.

The minimum amounts neutralizing the pain of the swelling, caused by the injection and the minimum limit of the efficacy of the remedy, were made especial points of study.

The author found most of the recently proposed local anesthetics more or less irritating and unsuitable for infiltration anesthesia.

Cocaine was investigated: the lower limit of effective action of which he found to be at 0.005 per cent., and then finally proceeded to beta-eucaine, a substance closely allied to it.

The limits of its effective action is 0.005 per cent.; like cocaine, the addition of 0.04 per cent. of the drug masks the pain of the injection, and equal percentages of the drug have the same freezing point.

The intensity and duration of the infiltration anesthesia is the same for solutions of both drugs of equal percentages; only the spread of the anesthesia beyond the limits of the directly infiltrated zone was slightly slower with a 1-per-cent. beta-eucaine solution.

There can be no doubt, the author states, that cocaine and beta-eucaine are the only two substances to be considered in the selection of a drug for infiltration anesthesia; they alone paralyze without irritation, and without injury to the tissues; and they alone effect an anesthesia lasting long enough for practical purposes even in dilute solutions.

Beta-eucaine is to be preferred to cocaine, because it is less poisonous and less specifically irritant, and also because its solutions are permanent, and can be boiled as often as necessary.

In all tissues accessible for direct infiltration it causes an anesthesia, without irritant effects, lasting from ten minutes to an hour or more. As much as 300 cubic centimetres (ten ounces) has been used with no unpleasant effects.

No interference with the normal course of the resultant wounds has been noticed when boiled beta-eucaine solutions were employed.

He mentions the fact that cocaine anesthesia rapidly disappears under the influence of incandescent heat; which destroys the drug. This also occurs with beta-eucaine.

It is true that in certain cases smaller quantities of more concentrated cocaine or beta-eucaine solutions would have advantages, but in ordinary cases there is no reason for using concentrated solutions of an anesthetic when dilute solutions give most excellent results. In any case it is not proper to exceed the maximum dose of 0.1 gramme (one and a half grains) beta-eucaine; in very dilute solutions (1 to 1000) doses of 0.3 gramme (four and a half grains) will do no harm.

The Temporo-Maxillary Articulation.

Wm. Knight, M.D. Cases of complete ankylosis of this joint, the author believes, would be much more frequent were it not for its anatomic construction of two separate compartments of synovial membrane, which offers a partial barrier against invasion by disease.

Any cause producing disease or injury in the other articulations will act with equal force in affecting this joint, and, besides, from its occasional involvement

from external ear and dental diseases; and with its exposed position it is more liable to be affected than the more protected articulations.

As causes of partial or complete ankylosis he gives trauma, scarlet fever, diphtheria, measles, typhoid and typhus fever. Rheumatic and gouty affections are more apt to cause pain and stiffening, etc., than lead to partial or complete ankylosis.

The bad terminations of comparatively slight injuries to this articulation in children may be best appreciated by bearing in mind the difference in the conditions of the joints in childhood and adult life, for while in adult life the different structures take on an individuality, while in earlier life the structures must be built up and nourished in concert and in due relation to one another. It is this intimate sympathy between the facts which will account for the tendency to diffuse disease contemporaneously in all of the articular structures.

Under the treatment of such affection, besides local and general constitutional treatment, the writer believes that "decided benefits can be obtained by the local abstraction of blood in the early stages by means of leeches. In the subacute and chronic cases, in which complete ankylosis has not taken place, results may be obtained by the prolonged use of counter-irritants, absorbents, and mechanical devices. The oleates of mercury exercise a curative effect, but should only be applied or spread over the part, and not rubbed in.

Among the mechanical devices are the various forms of shields, wedges, and gags that have been devised by dental surgeons.

For those cases in which complete ankylosis has occurred, operative treatment is the only means of relief.

If the diagnosis of fibrinous ankylosis be made, a tenotome should be passed into the articulation and the restraining bands divided; in cases of bony ankylosis, however, operation upon the bone itself, either by resection of the condyle or by Esmarch's method, is the only means of affording relief.

Personal Experience with Boltini's Operation in the Radical Treatment of Hypertrophy of Prostate.

Willy Meyer, M.D. (*Medical Record*, January 14, 1899). The results are those obtained from the experience of twelve cases of hypertrophied prostate treated in this manner, and are interesting in that one-half are reported as cured, with 15 per cent. markedly improved. The observations as to the good results being in consonance with the observations of other surgeons.

The author does not believe that there would be many recurrences after the operation; as it is certainly not easy to understand how it would happen that the deep grooves within the prostatic tissue, produced by the direct loss of thoroughly burnt tissue, as is proven by the passage of large masses of necrotic shreds passed in the urine between the twelfth and sixteenth day, would fill up again sufficiently to furnish an obstruction to the outflow of urine. It must also be remembered that the resulting cicatricial tissue will contract to a certain degree. But even if some of the symptoms did return there should be no objection to a repetition of the operation.

The writer states that, "after a somewhat extended experience, I am ready to advise every patient with non-complicated prostatic enlargement to submit to the galvano-caustic treatment as soon as the resort to continued self-catheterization has become imperative. In those patients with a very large, soft, and

easily bleeding prostate, it is, perhaps, the safer operation to previously ligate the vasa deferentia several days before the Boltini operation."

Cystoscopy he considers a most important procedure previous to the operation, as with it the diagnosis of a median lobe, a prostatic growth about the prostatic urethra and about the vesical neck may be made, besides the perpendicular or oblique direction of the pathognomonic groove at the internal urethral fold will show which of the two lateral lobes is principally involved, and also to detect the possible presence of a vesical stone.

It is most essential that in the operation the cuts should be made very slowly and that the knife should be at a white heat, as determined before and registered by an amperemeter. This is a variance from Boltini, but the increased heat is necessitated on account of working in a fluid media.

The question as to how many cuts had best be made and at what angle is still an open one. The posterior cut in the median line down to the fundus of the bladder is certainly the most important one, but it is the multiple division of the gland which will insure not only the subsidence of the subjective symptoms, but also a rapid reduction of the residual urine to perhaps nothing.

The writer believes that four cuts made at one sitting with the knife almost at white heat, and at angles to be determined by the cystoscope and rectal palpation, will best insure a rapid and successful result, and also that it is better to make the cuts too long than too short.

Non-interference should be the after-treatment, provided the patients are able to empty their bladder soon after the operation, and if percussion above the symphysis gives a tympanitic note, this showing no marked retention of urine.

In other cases the permanent catheter is indicated, as in cases where only a few drops with intense and painful tenesmus is present.

The two principal dangers in the operation are (1) sepsis or pyemia; (2) embolism of the pulmonary artery or its branches. At present it would seem that the larger the prostate, the greater its blood-supply; especially the more enlarged its venous plexus, the more pronounced the purulent catarrh of prostatic urethra, as well as of the bladder, and even of the pelvis of the kidney, the more dangerous is the operation.

Reasoning in this manner the advocation of an early operation would be permissible if it were known that this operation would cause shrinkage of the gland in incipient hypertrophy.

The author expresses the belief that Boltini's operation bids fair to take the lead of the many operations so far devised for the radical cure of hypertrophy of the prostate.

THERAPEUTICS.

UNDER THE CHARGE OF

HORATIO C. WOOD, M.D., LL.D.,

AND

ARTHUR A. STEVENS, M.D.

Action of Formaldehyde Vapor on the Growth of the Bacillus of Tuberculosis and in the Treatment of Phthisis.

William Murrell (*British Medical Journal*, January 28, 1899) gives the results of certain experiments, partly clinical and partly bacteriological, which were made to determine the effect of certain essential oils—oil of cinnamon and the oil of peppermint, and of formaldehyde—on the growth of the tubercle bacillus and in the treatment of phthisis. The oils proved unsatisfactory, both from a clinical and bacteriological stand-point. Formaldehyde, however, proved most satisfactory. The experiments showed that a weak solution of formic-aldehyde (40 per cent. aqueous solution), such as 6 per cent., exerted a very marked retarding and inhibitive influence on the growth of tubercle bacilli inoculated onto favorable culture media, and that this influence prolonged over forty-eight hours entirely prevented the growth and future development of the bacilli.

The clinical results of the formic-aldehyde treatment were quite in accord with the results of the bacteriological observations. A 6-per-cent. solution was, as a rule, employed, but this was increased or decreased according to the idiosyncrasy of the patient. In most cases the drug was inhaled either once or twice a day, compressed air by a simple mechanical arrangement being made to bubble through the solution. This gave the best results. In other cases, in hospital practice, especially, the "bib" method was employed. The drug in many cases caused irritation of the back of the throat, and sometimes induced violent paroxysms of cough. Twenty cases of phthisis were treated by formic-aldehyde, in six of them the results, for various reasons, were inconclusive. Of the remaining fourteen cases, twelve were much benefited, whilst two only slightly improved. No other remedy was employed, except an occasional pill of picrotoxin for night-sweats. In many of the patients the disease was far advanced.

In conclusion the author states that, in his belief, the best way of treating phthisis is to obtain the bacilli from the expectoration, cultivate them, pass over them various volatile substances until one is found which will arrest their growth, and then administer it by inhalation to the patient. This by no means precludes the use of fatty foods and other substances, such as cod-liver oil.

Belladonna in the Treatment of Bronchopneumonia in Children.

Coutts (*British Medical Journal*, January 28, 1899) has employed belladonna in several dozen cases of bronchopneumonia in the East London Hospital for Children. He states that case after case of the complaint in young infants, in the majority of whom with the former treatment one would have anticipated

a fatal termination, made a rapid and complete recovery. His colleague, Dr. Eustace Smith, has also been much struck with the rapidity with which all the symptoms clear up when belladonna is pushed. With it, as the sole drug administered, there was no need for steam tents, oxygen inhalations, unlimited stimulation, dry cupping, and all the rest of the former varied and trying treatment. So far as regards mortality, his experience with the drug was everything that was favorable. A few doses in most cases relieved the dyspnea. In a large number the temperature fell to normal very soon after the commencement of the treatment. The preparation used was the extract, in doses of one-quarter grain, every three or four hours, the same dose was given to an infant 6 weeks old as to a child of 6 or 7 years. The author attributes the good effects of the drug to its power of limiting or diminishing secretion into the bronchial tubes and pulmonary tissues.

Injections of Carbolic Acid in the Treatment of Tetanus.

Ascoli (*Bull. della R. Accad. Med. di Roma*, Anno xxiv, 1897–98, Fasc. iv; and *British Medical Journal*) published a monograph on the treatment of tetanus by Bacelle's method,—that is, by the hypodermic injection of carbolic acid. Thirty-four cases are noted with but one death. Of forty-seven cases treated with Tizzoni's serum, ten died, and of thirty-three treated with Behring's serum, thirteen died. After a full consideration of the results obtained by serum-therapy in tetanus, Ascoli sums up his conclusions as follows: (1) Statistics show better results from the carbolic acid than from the use of serum. (2) The carbolic acid must be given hypodermically and in large doses. (3) Under its influence the muscular contractions and spasms diminish in a marked degree. (4) The acid acts in tetanus particularly as an antitoxic and a moderator of the reflex activity of the nerve centres. (5) The energetic local disinfection, combined with the support of the patient's strength, are the cardinal points in the treatment of tetanus. (6) Serum treatment is useful as a preventive and also in the developed disease when it is possible to apply it early or when the production of toxins is still going on. But the results of this method, if they cannot be ignored, are neither convincing nor brilliant. Even if it were the most efficacious method, symptomatic treatment must not be neglected. (7) A patient suffering from tetanus must be treated eclectically, regard being had to the wound, to the intensity of the intoxication and its duration, and to the special conditions present in the case. The injections cause no inconvenience. The dose is three to four centigrammes of a 2- to 3-per-cent. solution, several times in the twenty-four hours. In certain cases a daily amount of thirty-five centigrammes has been administered without any sign of intolerance being manifested.

A Case of Acute Sulphonal-Poisoning.

Tresilian (*British Medical Journal*, January 28, 1899) reports a case of acute sulphonal-poisoning occurring in an hysterical woman, aged 28. Thirty-five grains of sulphonal were given in divided doses of twenty and fifteen grains, at an interval of twenty-four hours. On the day following the second dose the gait became ataxic, and she complained of headache and tinnitus aurium. Later cyanosis developed. She could not speak; she had fainted, and vomited two or three times. There was no dyspnea; the respirations were extremely

slow and shallow, and the heart's action was feeble and intermittent. The pupils were dilated. There was retention of urine; while the latter was dark, it was not Burgundy red. After free stimulation she gradually improved, the heart, however, was intermittent for a few days.

The Therapeutic Uses of the Suprarenal Glands.

Bates (*Medical Record*) states that it is essential to remember that the active principle of the gland is incompatible with preservatives, and that it is weakened by heat; consequently it must be freshly prepared. Ten grains of the dried gland should be dissolved in two drachms of water and the solution filtered. The aqueous extract is the most powerful astringent known. A drop of the 1-per-cent. (above) solution instilled into the eye whitens the conjunctiva of the globe and lids in from forty seconds to two minutes. It has no anesthetic or antiseptic properties. For operations upon the eye it will relieve congestion, so that cocaine anesthesia can be instituted. In various inflammatory conditions its use is indicated. Stricture of the nasal duct, when caused by inflammation, is relieved, and other strictures may be benefited by it. In diseases of the skin, even when it is unbroken, local anemia can be produced, as in the inflamed skin of a burn, an eczematous patch, intertrigo, and it has been recommended to prevent the pitting of small-pox. In one instance of pernicious anemia it produced a marked increase in the number of red blood-corpuscles. Since this substance has been demonstrated to be a tonic to the heart muscles, and blood tension is enormously increased by its subcutaneous use, its employment is suggested in cardiac disease. The hypodermic injections may give rise to local pain: the use of it *per os* is somewhat uncertain. In one instance of exophthalmic goitre there was decided improvement in the action of the heart and in the general muscular strength. The goitre almost entirely disappeared, the tremor was not very marked, and there was considerable gain in strength. The remedy is a pure astringent in all inflammations, and a hemostatic and a tonic to all muscle fibres, especially to those of the heart. It should be administered as an aqueous extract, a few drops being placed on the tongue.

Chlorine in Typhoid Fever.

Wilcox (*Medical News*, February 11, 1899) calls attention to the efficacy of chlorine in the treatment of typhoid fever. He contends that there is in medicine nothing more striking than the clearing up of the tongue, the improved mental condition, and the lessened local disturbances, and the general betterment which chlorine brings about when administered to these patients presenting the severer forms of the disease. After four years of observation he is ready to reiterate the conclusions which he presented in a former paper, —viz.:

(1) That in the treatment of typhoid fever chlorine can be safely administered until complete disinfection of the alimentary canal is obtained.

(2) Under its use the tongue becomes cleaner, the appetite and digestion better, the fever lower, and the stools devoid of odor save that due to chlorine.

(3) The general strength, intellectual processes, and nervous conditions improve.

(4) The disease is shortened in duration and the patient usually proceeds to a rapid and complete recovery.

[Burney Yeo has been a strong advocate of the use of chlorine in typhoid fever. He gives the following directions for preparing it: Into a twelve-ounce bottle put fifteen grains of powdered potassic chlorate, and pour on it sixty minims of strong hydrochloric acid. Fit a cork into the mouth of the bottle, and keep it closed until it has become filled with greenish-yellow gas. To hasten the process keep shaking the mixture. Then pour water into the bottle, little by little, closing the bottle and well shaking at each addition, until the bottle is filled. To twelve ounces of this solution, he recommends the addition of twenty-four to thirty-six grains of quinine, and an ounce of syrup of orange, and of this mixture an ounce is to be given every two, three, or four hours, according to the severity of the case.]

OBSTETRICS.

UNDER THE CHARGE OF

BARTON COOKE HIRST, M.D.,

ASSISTED BY

W. A. NEWMAN DORLAND, M.D.

Puerperal Thrombosis and Embolism.

Singer (*Archiv für Gynäkologie*, Vol. lvi, No. 1) reports thirty-five cases of embolism and thrombosis following childbirth. He confirms the view of Mahler, who first called attention to the fact that the pulse is the most noteworthy danger-signal of this very grave complication. A gradual acceleration of the pulse, with a graded accent of the sphygmographic wave out of all proportion to the temperature, indicated an infection of the patient, with the probability of an approaching thrombosis. With this symptom we usually find also severe headaches, excruciating pains along the course of the veins of the lower extremities, slight dyspneic attacks, pains in the pleuræ, and occasionally, when pulmonary thrombosis occurs, a blowing sound over the pulmonary vessels. Should one or more of these symptoms appear, it is very important that the patient be kept absolutely quiet. Singer reviews all the cases of thrombosis or embolism reported, and found that in about 90 per cent. of them quickening of the pulse occurred and preceded the other manifestations. The lancinating, lightning-like pains in the legs are also an early symptom. The etiology of puerperal thrombosis is mainly inflammatory. In all the patients pelvic peritonitis, parametritis, fetid lochia, and ulceration of the vulva and vagina have been noted. In twelve cases gonococci were found, in three streptococci, in three staphylococci, and in a few cases mixed infection of gonococci and streptococci were noted. In the rest of the cases in which germs could not be found the infection was probably gonorrheal, as there is a great tendency for the gonorrheal material to spread beyond the uterine veins and to enter the general circulation. The writer concludes that (1) the formation of a thrombus is announced by a gradual rise of the pulse. The acme of its frequency coincides with the de-

velopment of the thrombus and the appearance of the lung-symptoms. (2) The pulse-rate accompanying the thrombus is characteristic. (3) In a typical thrombosis the pulse ascends while the temperature remains normal. With the appearance of edema or pulmonary symptoms the pulse rises, however; at times also the temperature; but while the latter subsides within a short time the pulse remains quick for several days. (4) At times there is an exception to this. (5) In these cases we must examine the secretions for the etiologic factors of the inflammation; and, as a rule, gonococci will be found there. (6) In the treatment of puerperal thrombosis an early diagnosis is of prime importance; this can easily be established by the characteristic acceleration of the pulse. (7) Complete rest in the recumbent posture must be insisted upon, and even after the return of the normal pulse-rate, it is advisable to keep the patient in bed for about three weeks.

Eclampsism.

M. Bar (*Medical Review*, Vol. xxxvii, No. 26) proposes to call puerperal eclampsia without convulsions by the name eclampsism. In eclampsia, the author says, the occurrence of convulsions is a capital feature, and it aggravates the prognosis very decidedly; but what needs to be known is the fact that there are a good many cases in which no convulsions take place, but, instead, the patient is attacked by very intense neuralgia, nausea, diarrhea, or some other striking symptoms. Such cases may prove fatal, and that speedily. Bar seems to have been the first to take cognizance of this condition, but his remarks on the occasion in question were called forth by the histories of his cases reported by Budin at a meeting of the Obstetrical Society of France. Budin's first case was that of a primipara, aged 31 years, who had arrived at term, and was brought to the Maternity December 16, 1897. She had prodromes of eclampsia, and there was a notable amount of albumin in her urine. She also had gastralgia, headache, disturbances of vision, and a cerebral condition which Budin simply called "singular" without describing it. She was delivered spontaneously of a living child, and the delivery was followed by hemorrhage which, although the amount of blood lost did not exceed twenty-five ounces, called for artificial delivery of the placenta. After this the prodromes of eclampsia became more pronounced, her general condition grew worse, and, in spite of every care, she died in seven hours without having had a convulsion. At the post-mortem examination the characteristic renal lesions were found, and the liver presented ecchymotic spots, having the geographic contours seen in cases of eclampsia. The second patient was also a primipara, who continually had "oppression." At the time of her entering the Clinique Tarnier, March 15, she had albumin in the urine, vesical disturbances, etc. She was considered to be in imminent danger of eclampsia, and was treated accordingly. She was delivered a week later without having had a convulsion, although at every instant one was expected to occur. The placenta showed patches of atrophy and numerous hemorrhages,—some old and others recent. The woman recovered. It is very important, says Budin, to observe the premonitory symptoms of eclampsia. Patients may have self-intoxication, and be found in a real state of eclampsia, without having any convulsive attack. Formerly convulsive seizures were looked upon as the characteristic mark of eclampsia; they are still the cardinal feature in the majority of cases, but they are only one among numerous symptoms of self-intoxication. They are the most striking, but the others should not be overlooked, either from the diagnostic or from the therapeutic view.

GYNECOLOGY.

UNDER THE CHARGE OF

CHARLES BINGHAM PENROSE, M.D.,

ASSISTED BY

H. D. BEYEA, M.D., AND H. L. WILLIAMS, M.D.

Accessory Tubes and Ovaries, with Extrauterine Pregnancy.

Voigt (*Monatschrift für Geburtshülfe und Gynäkologie*, Band viii, Heft 6) describes a peculiar and very interesting case of extrauterine pregnancy in which laparotomy was performed for ruptured ectopic gestation. After ligating the ovarian and uterine arteries the fetus and placenta were removed without difficulty, but after closing the abdomen, internal hemorrhage continued, and the woman died from loss of blood. At the post-mortem it was found that bleeding had continued from the placental site.

As the fetus was found free in the abdominal cavity, it was at first supposed to be a case of primary abdominal pregnancy. But careful search at the post mortem showed the anomalous condition on the right side of two ovaries distinctly separated from one another, and three Fallopian tubes, only one of which, however, entered the uterus.

The ovum had become fertilized in the abdominal cavity, and had then engrafted itself onto one of the fimbriated extremities of an accessory tube, at which point the placenta had developed.

The only similar cases contained in the literature are those reported by Zweifel and Martin.

Tubal Menstruation.

Thomson (*Centralblatt für Gynäkologie*, No. 45, 1898) reports two very interesting cases which seem to confirm the observation of Martin and Leopold that during menstruation a similar change takes place in the mucous lining of the tube to that of the mucous lining of the uterine cavity.

In the first case a fistulous communication existed from one of the Fallopian tubes. At each menstrual period it was observed that this discharged blood coincidently with the uterus, during the entire period, and ceased promptly with the flow.

In the second case an abdominal fistula resulted from an operation performed for early tubal gestation. Eighteen months later, coincident with the re-establishment of menstruation, the patient noticed bleeding from the fistulous track.

This occurrence was repeated on several subsequent periods, until a silk ligature was discharged from the wound, when healing took place spontaneously.

Other cases bearing on the same point have been reported by Hofmeir, Terrilon, and Londsbery.

Epithelial Elements in Fibroid Tumor.

Legnen (*Centralblatt für Gynäkologie*, No. 34, 1898) has sometimes found epithelial cells between the muscular fibres and within the meshes of the connective tissue of fibromyomata, particularly those of the submucous variety. These usually appear as small follicles, with no outlet, lined by a single layer of cells, and he considers that they are derived from a proliferation of the glands of the endometrium.

Lockstardt (*Monatschrift für Geburtshülfe und Gynäkologie*, Band vii, Heft 2) has also found somewhat similar conditions in seven specimens which he has examined. In his cases the tumors were all subperitoneal and were located close to the base of the Fallopian tube. He therefore inferred that the epithelial elements were derived from the epithelial elements of the tubal mucosa rather than from the remains of the obliterated Wolffian body, as is held by Recklinghausen.

Both observations are of importance in throwing some light on the presence of cysts with epithelial linings—in these tumors—and the carcinomatous degenerations of fibroids.

Histological Study of the Vagina.

Pretti (*Zeitschrift für Geburtshülfe und Gynäkologie*, Band xxxviii, Heft 2) arrives at the following conclusions, after careful microscopical studies of the vagina in thirty-two cases: Neither glands nor mucous follicles could be found in the lining membrane of the vagina, which is directly contrary to the teachings of many writers.

The vaginal lining membrane should be considered as a true inversion of the epidermis—the epiblasts—rather than as a mucous membrane. As age advances the stratified squamous epithelium becomes more flattened, and gradually diminishes in thickness from the vestibule to the portio.

The height of the papillæ has no relation whatsoever with the age of the patient, since papillæ only slightly marked, are frequently found in young women.

Extensive small round cell-infiltration was often found in the vaginal wall, when the macroscopical appearance was entirely normal.

This should not be considered of pathological importance, but merely on the result of an acrid cervical discharge.

PATHOLOGY.

UNDER THE CHARGE OF

JOHN GUITÉRAS, M.D.,

ASSISTED BY

DAVID RIESMAN, M.D.

Myofibrosis Cordis.

Dehio (*Deutsche Archiv für klinische Medicin*, Band lxii, Hefte 1 und 2) has examined a large number of hearts in a more careful manner than has been the

custom of other observers. Sections were cut from nearly every part of the organ. In the beginning 225 sections were made of every heart, later from 80 to 100 were found adequately to represent the general structure. In the hearts of old persons he found the same changes that have been described by Delmange, —viz., (1) hypertrophy and dilatation; (2) atheromatosis of the large coronary arteries and endo-periarteritis of the finer vessels; (3) perivascular, insular, or "sleeve-form" thickening of the muscular branches, and degeneration and atrophic changes in the tributary territories; and (4) sclerotic changes in the pericardium; thickening of and atheromatous changes in the valves and endocardium. In addition Dehio found a diffuse intramuscular fibrosis which he designates *senile myofibrosis*. The statement that hypertrophy (and dilatation) of the heart occurs in the old is interesting and contrary to the usual teaching. But as Dehio excluded all cases in which conditions that ordinarily lead to cardiac hypertrophy existed, his conclusions, confirming as they do those of Delmange, are credible. Unfortunately no weights are given. As to the cause of senile myofibrosis, it is likely that sclerosis of the coronary arteries plays a prominent *rôle*, but overstretching of the heart-muscle is independently of coronary sclerosis, probably capable of producing it.

A study of diseased hearts has shown to the author the existence of a diffuse fibrosis in all cases of hypertrophy and dilatation. Localized fibrosis—the well-known, untranslatable *Muskelschwielen* of the Germans—has long been known in these cases, but there is, in addition, a generalized process, nearly constant, to which but little attention has been paid. Microscopically, there is an increase of connective tissue not alone between the muscle-fasciculi, but also between the individual fibrillæ. The latter are separated, and may be surrounded by small cell-infiltration. In later stages the connective tissue becomes more fibrillar. According as the connective-tissue increase is most marked between the fascicles or between the fibrillæ, the author recognizes an *interfascicular* and an *interstitial myofibrosis*. Vacuolar degeneration of the muscles is common. Fragmentation was frequently found, but is not considered significant. The vessels show no noteworthy changes, except in cases of senile sclerosis. The epicardium and endocardium nearly constantly present thickening and induration, which extend inward along the intermuscular septa.

A study of the cases showed that pure hypertrophy was not accompanied by myofibrosis, but that in every case, no matter what the heart-lesion, in which hypertrophy was associated with dilatation, myofibrosis was present.

All causes that lead to overstretching of the heart-muscle also lead to an increase in the intramuscular connective tissue. The myofibrosis is always most marked in the *auricles*. The sequence of events may be stated as follows: If the hemodynamic resistance exceeds the normal, there ensues an hypertrophy of the affected part of the heart, an hypertrophy dependent chiefly on an increase in length and thickness of the muscle-fibres. After the hypertrophy has existed for a time the connective tissue becomes hyperplastic. With the onset of insufficiency of the muscle, retrogressive changes appear in the fibrils, and the connective-tissue hyperplasia becomes more marked. The author inclines to the view that the changes in the muscle are primary, and that the altered muscle-cells act as an irritant to the connective tissue, causing it to proliferate. Venous stasis in the heart-muscle may also be a factor in the connective-tissue hyperplasia.

As to the cause of the muscle-changes, Dehio believes it is connected with a deficiency of reserve force in the hypertrophied heart. Such a heart cannot

respond well to increased demands and readily enters a state of fatigue. Fatigue, if adequate recuperation does not take place, leads to atrophy and degeneration of the muscle, and this to connective-tissue overgrowth. These muscle-changes and the fibrosis are then the anatomic substratum of fatigue and mechanical insufficiency of the heart.

Tubercle Bacilli in Market Butter.

Obermuller (*Hygienische Rundschau*, January 15, 1899), who, in a previous investigation had found tubercle bacilli in market butter, recently examined ten samples of Berlin butter of the best quality, purchased at different places, and found, by inoculating animals with the sediment, obtained by centrifugalization, that four samples contained tubercle bacilli.

From the tissues of the animals that became tuberculous he was able to isolate the tubercle bacillus in pure culture, especially by using glycerinated blood-serum, which is better for the purpose than glycerin-agar. He does not think that contaminated butter is a main factor in the spread of tuberculous infection; the exact part which it plays awaits investigation. Knowledge concerning the danger of tuberculosis through consumption of milk and milk-products should be disseminated, and the methods of prevention pointed out. Most important is governmental control of milk-cattle with respect to tuberculosis, and the use of tuberculin inoculations.

BOOK NOTICES.

Diseases of the Eye. A Hand-Book of Ophthalmic Practice for Students and Practitioners. By G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College; Professor of Diseases of the Eye in the Philadelphia Polyclinic, etc. Third Edition, thoroughly revised. Philadelphia: W. B. Saunders, 1899.

This edition is better than any of its predecessors. Bacteriology has been considered with a much greater degree of fulness. Certain articles have been rewritten largely, or at least have been materially changed. The order of the examination of the patient has been more logically arranged and the methods have been more greatly amplified.

Dr. Jackson's most excellent revision of Dr. Wallace's work practically remains as it was written. It is too bad that the author did not correct the first few lines on page 104, in which it says that the magnified size of the optic disk is "nearly the size of a twenty-five-cent. piece." So, too, with the expression on page 161, that "myopia does not *usually* (italics ours) decrease with age." The want of reference to the foot-note on page 122, which was noticed in a previous review as appearing on page 117, has remained untouched.

Wisely compiling from the writings of the most eminent authorities and unhampered by any sign of individualism, the subject-matter becomes an exposition of the branch of medicine to which it is devoted, that will allow both the student and the ordinary reader a broader latitude of thought than would have otherwise been obtained.

We note with pleasure that the drawings of the relative positions of the true and the false images of the candles in the various palsies of the extraocular muscles, that have been taken from Fuchs's well-known and deservedly popular book, are now corrected.

Atlas of Syphilis and Venereal Diseases: Including a Brief Treatise on the Pathology and Treatment. By Prof. Dr. Franz Mracek, Vienna. Authorized translation from the German. Edited by L. Bolton Bangs, M.D. Philadelphia: W. B. Saunders, 1898.

In the study of syphilis, as well as skin-diseases in general, a good atlas is indispensable. This is particularly true of those who are unable to avail themselves of a large clinical experience. The aim of the author of this book has been towards the practical rather than the theoretical. He has therefore reproduced the more common venereal affections in a very satisfactory manner, and, moreover, at a price that places the work within the reach of all. Seventy-one of the illustrations are in colors. A brief clinical history of each case accompanies the illustration,—an excellent idea, and one that should be more generally followed.

The text occupies but 117 pages. The author believes that syphilis, like tuberculosis, glanders, etc., is caused by a micro-organism, although the specific bacillus has not yet been isolated, a view that is being more fully accepted by syphilographers every year. The disease is then considered in the order in which the symptoms occur in a systematic manner. After describing the syphilides, the various manifestations of the disease in the different systems—motor, lymphatic, digestive, respiratory, circulatory, genito-urinary, and nervous—are taken up.

We are entirely in accord with the author in the first portion of the following: "As soon as syphilis produces lasting functional disturbances in the circulatory organs, neuralgias or pathological changes in the skin or mucous membranes, remote from the point of infection, the physician must begin a specific mercurial treatment, and persist in it until the morbid symptoms have disappeared completely." We do not consider it safe to discontinue treatment with the disappearance of symptoms, however, nor do we believe that to pursue the treatment for a further period equal to "a third or even a half of the duration of the symptoms after the latter have disappeared" is adequate. We, perhaps, are all governed by personal experience, and our results with the more prolonged and systematic treatment for a definite period, even if symptoms be absent, has been so uniformly satisfactory that we would not be willing to adopt the less radical course here recommended.

The author is doubtless correct in saying that the sovereign method of administering mercury is in the form of the official mercurial ointment, but the objections to its regular employment are such that it has never been generally adopted in this country. The hypodermatic method is described, but without comment. The internal administration, we are told, is employed in Austria only for mild cases of relapse, "and is not recommended under any other circumstances." The iodides are not employed as a routine practice, but "are indicated in general glandular enlargements, in the scrofulous diathesis, in accidental nervous complications, such as headache and insomnia, and in cases where a long-continued course of mercury has proved useless."

We note that cauterization is still the "sovereign" remedy for soft chancres. In this country this treatment has largely been supplanted by the employment of antiseptics, and we believe with distinct advantage, although we recognize the necessity for the cautery in rare cases.

The subject of gonorrhea, it seems to us, has not been dealt with in sufficient detail. The facts set forth are orthodox, however, and this section has been enhanced in value by a considerable number of prescriptions.

This book is to be recommended as an atlas for the student and general practitioner. The pathology is sound, and the treatment, if not entirely applicable here, is at least interesting as showing us the prevailing practice in Austria. We do not doubt that the author's results compare favorably with the best everywhere, which is an acknowledgment that the same results may be obtained by approaching a subject in different ways, but only if the fundamental principles be fully understood.

Human Anatomy. A Complete Systematic Treatise by Various Authors. Including a Special Section on Surgical and Topographical Anatomy. Edited by Henry Morris, M.A. and M.B. (Lond.), Senior Surgeon to the Middlesex Hospital; Examiner in Surgery in the University of London, etc. Illustrated by 790 woodcuts made expressly for this work, over 200 of which are in colors. Second edition. Revised and enlarged. Philadelphia: P. Blakiston's Son & Co., 1898.

Morris's Anatomy at once took a place among the standard textbooks upon its appearance in 1893. It is the creation of such well-known teachers as Anderson, Davies-Colley, Jacobson, Morris, Sutton, Treves, Walsham, and others. In the present edition, both the text and illustrations have been added to, and a description of the skin by Mr. Anderson has been included. A brief chapter on vestigial and abnormal structures has been supplied by Dr. Robinson.

The editor has restricted the scope of this work to "a complete and systematic description of every part and organ of the human body so far as it is studied in the dissecting room." In this respect it differs from most books on anatomy, which also treat of embryology and histology. These subjects, Mr. Morris believes, can be best studied from books devoted to their consideration and in the laboratory.

A novel and by no means unimportant feature of this work is the method of describing the illustrations,—namely, the names of muscles, fascias, and ligaments appear in one kind of type, those of arteries, veins, and lymphatics in a second, of the bones in a third, and of nerve structures in a fourth. In the illustrations of the bones, the origins of muscles are indicated by red lines and the insertions by blue lines, while the attachments of ligaments are shown by dotted black lines. Another characteristic is the effort which is everywhere apparent to consider each subject from the practical stand-point. This result is obtained by reason of the fact that the different contributors are active practitioners and teachers, as well as anatomists. The section on surgical and topographical anatomy is much more extended than is usually found in works of this kind. All of these features are of especial value to the surgeon as well as to the student of medicine.

As this treatise was written for the use of those preparing for the examinations of the Conjoint Board of the Royal Colleges of Physicians and Surgeons, for Fellowship of the Royal College of Surgeons, and for the examinations in anatomy at the various universities, and as the editor and some of his associates are represented in these boards, there can be no doubt that the needs of the student have been kept well in mind, in the presentation of the different subjects.

The work of the publishers is up to their usual high standard. The book has the very much to be desired attribute of remaining open with the pages lying flat from cover to cover.

GLAUCOMA: ITS SYMPTOMS, VARIETIES, PATHOLOGY, AND TREATMENT. By ALEX. W. STIRLING, M.D., C.M. (Edin.), D.P.H. (Lond.). Member of the Ophthalmological Society of Great Britain; late House Surgeon, Royal Westminster Ophthalmic Hospital, London; Instructor in Ophthalmology and Ophthalmic Surgeon, Post-Graduate Medical School and Hospital, New York, etc. Atlanta, Georgia: Publisher, Jones H. Parker, St. Louis, Missouri.

This work, one of the most serious and complete of its kind, is the final result of a series of lectures that were delivered by the author to the students of the Post-Graduate Medical School and Hospital of New York.

To those who are interested in the subject in all of its details, no better guide can be offered. Much care has been taken to obtain an adequate amount of the vast literature, both historic and contemporaneous, that is at hand. To this the results of the personal studies in the well-known Pathological Laboratories of the Royal London Ophthalmic Hospital have been added; while conscientious labor in the careful arrangement and proper order of the material itself have given the reader the most pleasant and agreeable task of "running while he reads" during its perusal.

It is a pity that the mechanical make-up of the volume, the subject-matter of which is justly due everything that good type, clean

impress, proper paper, and freedom from typographical error can give, is not better.

The author is to be congratulated on his endeavor, which should find an abiding place in the working library of every up-to-date ophthalmologist.

A Practical Hand-Book on the Muscular Anomalies of the Eye. By Howard F. Hansell, A.M., M.D., Clinical Professor of Ophthalmology, Jefferson Medical College; Professor of Diseases of the Eye, Philadelphia Polyclinic and College for Graduates in Medicine; Consulting Ophthalmologist to the Chester County Hospital; Ophthalmologist to Frederick Douglas Memorial Hospital; Member of American Ophthalmological Society, Fellow of College of Physicians of Philadelphia. And Wendell Reber, M.D., Instructor in Ophthalmology, Philadelphia Polyclinic and College for Graduates in Medicine; one of the Ophthalmologists to the Methodist Episcopal Orphanage. Small 8vo, pp. 182. Philadelphia: P. Blakiston's Son & Co., 1899.

This little book, which is expressive of the most advanced thought and work in a branch of ophthalmic science that at best is but fairly understood, is a boon to most working ophthalmologists.

The subject-matter, one which by reason of the invisibility of most of the anatomical structures involved and the mutability of the symptoms is fraught with many difficulties, is given to the reader in a conservative and most logical manner.

The therapeutical teachings, though not many, are evidently based on a broad clinical experience, and for this reason, at least, demand careful attention.

We wish the work all that it deserves,—a ready sale and many editions.

Ocular Therapeutics for Physicians and Students. By F. W. Max Ohlemann, M.D., Minden, Germany. Late Assistant Physician in the Ophthalmological Clinical Institute of the Royal Prussian University of Berlin, etc. Translated and edited by Charles A. Oliver, A.M., M.D. (Univ. Pa.). One of the Attending Surgeons to the Wills Eye Hospital; one of the Ophthalmic Surgeons to the Philadelphia Hospital, etc. Philadelphia: P. Blakiston's Son & Co., 1899.

The object of this book is to present to the English-speaking ophthalmologist and the general practitioner an association of the best work of the continental writers on treatment of diseases of the eye, thus bringing, as it were, the therapeutic methods pursued in the foreign ophthalmic clinics directly before the reader. A careful study of the

contents of the work will show that this has been accomplished in a satisfactory manner. The arrangement of the contents is orderly and the brief symptomatology is sufficient for a recognition of the type of affection under consideration. An unusually large number of carefully prepared and well-recognized formulæ, expressed in both the metric and apothecary systems, is given in the text, and a very comprehensive cross-reference index for diseases, drugs, and authors is appended. Both the editor and the publisher are to be congratulated on good work.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY, being a yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, drawn from Journals, Monographs, and Text-Books, of the Leading American and Foreign Authors and Investigators. Under the general editorial charge of GEORGE M. GOULD, M.D. Illustrated. Philadelphia: W. B. Saunders, 1899.

A review of this edition of the year-book confirms the good opinion that we expressed when the first volume was issued, in 1896. The most important change in the list of contributors is the omission of the name of Dr. William Pepper, whose task has been ably performed by Dr. Stengel and Dr. Edsall. We believe that this work represents more nearly the gist of the most important contributions to medicine and surgery that have been made during the past year than any similar year-book offered to the profession. Moreover, the frequent critical comments of the able corps of collaborators make it especially valuable as a work of reference to the general practitioner.

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DISEASES OF THE CONUS MEDULLARIS AND OF THE CAUDA EQUINA.[1]

By Horatio C. Wood, M.D., LL.D.,

PHILADELPHIA,

Clinical Professor of Diseases of the Nervous System, University of Pennsylvania.

Gentlemen:—I propose to-day to call your attention briefly to a class, or perhaps I ought to say set, of diseases which are very rare, and concerning which your text-books say little; although each of these ills is of supreme importance to any one who is so unfortunate as to suffer from it. These diseases are not a natural group, at least from a pathological point of view, but are really diverse affections attacking a distinct anatomical region, and acquiring a concurrence of symptoms from the structural and physiological peculiarities of that region.

As you of course know, the spinal cord terminates at the lower border of the first lumbar vertebra,—or sometimes, especially in the female, at the second lumbar vertebra,—in the *conus medullaris*, which reaches to the upper edge of the sacrum, surrounded by a large number of nerve-strands known as the *cauda equina.*

The cauda equina is composed of the origins of the lumbar and sacral nerves, constituting the lumbar and sacral plexus. The lumbar plexus is formed from the anterior roots of the upper four lumbar nerves; the sacral plexus from the fifth lumbar and the four sacral roots. From these plexuses are supplied nerves to the muscles of the abdomen and buttocks, to the genital organs, and to the legs. It is plain that, accurately speaking, the conus medullaris forms a portion

ΩΩ[1] Abstract of a lecture delivered by Professor H. C. Wood.

of the spinal cord, whilst the cauda equina belongs to the peripheral nerves.

The conus medullaris and the cauda equina can scarcely be said to have any diseases, pathologically considered, peculiar to themselves. They are liable to be affected by tumors, myelitis, meningitis, neuritis, and pressure from fractured or diseased bone. In ninety cases collected by Ricklin and Dufour, fifty-two were due to traumatism, twenty-seven to tumors, four to syphilis, three to hemorrhagic meningitis, and one to tuberculosis. In two or three cases the cause of the affection seemed to have been an ascending neuritis.

The conus medullaris is physiologically connected with the genito-urinary system and with the colon. Lesions confined to it do not cause pain, and produce only disorders of micturition, of defecation, and of the sexual function.

The attack usually commences with irritability of the bladder and obstinate constipation; these symptoms being in a little while followed by urinary retention and fecal incontinence. Sometimes the patient's attention is first called to himself by urinary incontinence, which may be associated with lack of the ordinary desire for urinating when the bladder is full. Finally, a state is developed in which there is no sensibility, so that a patient is unable to tell whether the bladder or colon is full or empty, and has no knowledge of the evacuation of either of their contents. Theoretically, priapism and sexual excitement should exist early in an attack, but the records show that in the great majority of cases impotence with complete loss of the power of erection have appeared very early without preceding evidences of excitement.

The diagnosis of diseases of the conus terminalis depends upon the limitations of the symptoms to the genito-urinary organs and the intestinal tract, and of course must be largely reached by the process of exclusion. It is the coexistence of positive spinal symptoms in the region mentioned, with the absence of symptoms in other portions of the body, that justifies the conclusion. Moreover, owing to the close anatomical and physiological relations of the structures involved, the symptoms are progressive, regular, and symmetrical, lacking the bizarre irregularity so characteristic of affections of the cauda equina. The conus medullaris is, in fact, a part of the spinal cord, and its diseases partake of the symmetrical character of the affections of other portions of the cord, whilst the cauda equina belongs to the peripheral nerves, and its symptomatology, like that of peripheral nerves in general, is more or less irregular in all its relations.

Lesions affecting the cauda equina produce in the basal segment of the trunk and the legs disturbances of sensation, motion, and nutrition, whose situation and character depend upon the particular por-

tion of the cauda involved. Almost invariably there are disturbances of the genito-urinary tract and of the rectum.

The character of the pain varies with the character of the lesion. It is usually, however, severe, and is that of a neuritis. It is almost invariably associated with anesthesia, hyperesthesia, and paresthesia. The disturbances of motility commonly take the form of paralysis, rarely with contractures. The condition of the knee-jerk varies in different cases, according to the portions of the cauda and consequent muscular distribution involved. It is often unlike in the two legs. The trophic changes consist in muscular atrophy, with the development of the reactions of degeneration, ending, it may be, in complete loss of electro-contractility. Very frequently in the middle of the sacrum, on the buttocks, or in the neighborhood of the great trochanters, acute decubitus comes on, and may become so severe as to produce a fatal cachexia.

In diseases of the cauda equina the seat of the lesion is to be recognized by the coexistence in the genito-urinary tract, the intestines, the abdominal walls, the buttocks, and the legs, of irregular, asymmetrical disturbances of motility, sensation, and nutrition. In an acute affection of the spinal cord the symptoms are more or less symmetrical, wide-spread, and parallel in their development, distribution, and intensity; whereas, when the cauda equina is encroached upon, the irregularities in the effects of pressure or of inflammation upon the different strands cause an extraordinary irregularity in the intensity and collocation of the symptoms, so that one leg, or one group of muscles, or one nerve area may be involved, whilst the contiguous parts are unaffected, and the opposite side of the body is, perhaps, in its normal condition; hyperesthesia may abut on anesthesia, a group of wasted muscles may be surrounded by normal muscle masses, the knee-jerk may be absent in one leg and present in the other, and so on, in almost endless variety. By some authorities paradoxical ischuria is believed to be pathognomonic; it consists of repeated alternating paroxysms of incontinence and of retention. Defecation and micturition may be painful, with much tenesmus. The peculiar characteristic irregularity of the symptoms is well shown by a case reported by Bernhardt, in which sexual desire was present, but in which, although the sensation of orgasm occurred during coitus, there was no ejaculation, evidently on account of a paralysis of the bulbo-cavernosal and ischio-cavernosal muscles.

The prognosis in diseases of the conus terminalis is exceedingly grave. It is possible that functional disease of the part may exist, but of such disease we have at present no knowledge; and when symptoms are sufficiently pronounced for the recognition of the seat of dis-

ease to be complete serious organic change has almost always taken place. The histological characters of the affected part do not lend themselves to recovery, whilst, owing to the small size of the conus medullaris, all its tissues are commonly almost simultaneously involved. The prognosis of diseases of the cauda equina is perhaps not quite so hopeless as when the conus is involved, but is always very serious; and the results in the great majority of cases are permanent.

Unless the disease in the conus be of syphilitic nature treatment is without avail. In the case of caudal disease, one of the first points to be settled is as to the propriety of surgical interference; when the affection is the result of a traumatism, especially if it has developed rapidly after such traumatism, or when there is sufficient reason for supposing that the lesion is of the nature of a tumor, surgical measures should be resorted to. When syphilis exists active antisyphilitic treatment should be instituted. Severe, long-continued counterirritation over the sacrum might possibly be useful in some cases, but ordinarily the tendency to trophic sloughing makes it a very doubtful procedure.

HIGH DIVISION OF THE POSTERIOR TIBIAL TENDON.

By James K. Young, M.D.,

PHILADELPHIA,

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The Necessity of Operation.—The necessity of dividing the posterior tibial tendon is recognized by all practical surgeons who have had much experience in the treatment of club-foot. In all cases of pure varus, and in most cases of congenital equino-varus, the deformity can be thoroughly corrected without the division of this tendon. The subcutaneous division of this tendon requires practical anatomical knowledge, and great precision in the use of the tenotome. The division has usually been accomplished by the subcutaneous method; but the high division of this tendon, by the open method, offers so many advantages that the object of this communication is to recommend the latter method.

Methods of Division.—The directions of dividing this tendon by the subcutaneous method differ somewhat in the works of surgical writers. All surgeons agree in using the blunt tenotome for fear of injuring the posterior tibial tendon. The puncture is usually made with a sharp-pointed tenotome, three-quarters of an inch above the

tip of the internal malleolus, on a line drawn vertically parallel with the border of the tendo achillis and midway between the posterior border of the malleolus, and the corresponding border of the latter tendon. It will be observed that at this point the anatomical relation of the part is as follows. (Fig. 1.) The tendon of the tibialis posticus lies immediately posterior to the border of the malleolus. Next to this lies the tendon of the flexor longus digitorum, then the posterior tibial artery, then the posterior tibial vein, and last the posterior tibial nerve. The artery being the middle of the five structures. The usual division of the tendon is accomplished by passing the blunt

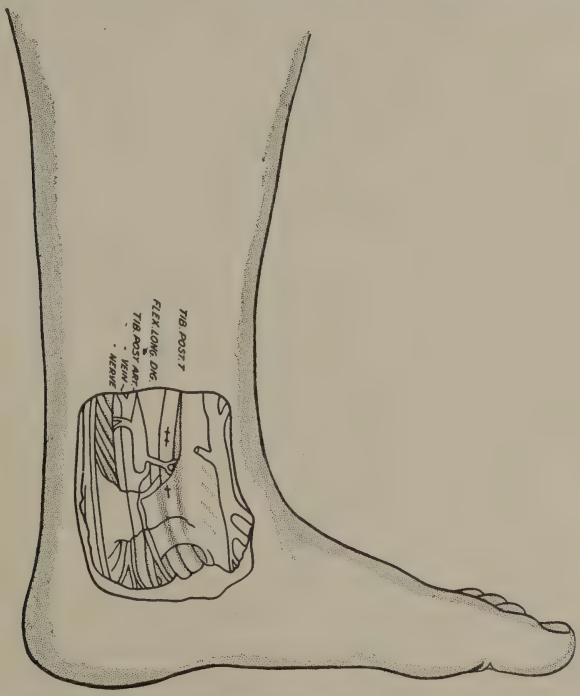

FIG. 1.—Anatomical relations of tibialis posticus tendon. † Venal site of subcutaneous tendon.

tenotome between the tendons of the posterior tibial and the flexor longus digitorum, turning the cutting surface against the former, and cutting upon the malleolus. Agnew, in his "Surgery," directs that the blunt tenotome be passed between the malleolus and the tibialis posticus tendon, turning the cutting surface against the tendon, and cutting directly upward against the tendon. It will be observed that the latter is accompanied by more risk than the former method.

Dangers of Subcutaneous Division.—The dangers of the subcutaneous method are greater in infantile cases, since in adults the tendon

can be readily located and divided by the method just given. The danger of wounding the artery is probably exaggerated, but cases have been recorded by Adams, Bonnet, Tamplen, Agnew, Bardford and Lovett, and others. The result of injury to this vessel is usually aneurism, necessitating ligation, and resulting ultimately in recovery.

High Division by Open Method.—After experience with all methods the writer would recommend for ease, safety, and satisfaction the high division of this tendon by the open method. It will be observed from the drawing that at a point an inch and a half above the usual locality the tendon is alone and more widely separated from the other structures. Incision is made close to the border of the tibia, beginning at

FIG. 2.—Incision for high division of posterior tibial tendon.

a point an inch above the tip of the malleolus. (Fig. 2.) Incision is carried upward an inch and a half, fascia over the tendon is opened, the tendon raised upon a grooved director or dry dissector, and divided. The wound is closed by one or two catgut sutures.

Advantages of the Open Method.—The advantages of the open method for the division of this tendon are the ease, safety, and satisfaction with which it can be accomplished. While recommending the "open method" in the division of this tendon, the writer believes that it is seldom necessary to resort to the open method in lengthening the tendo achillis, the tibialis anticus, or the peroneal tendons. The division of the ham-string tendons can often best be accomplished by the open method.

AURAL MASSAGE.

By Ralph W. Seiss, M.D.,

PHILADELPHIA,

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A careful search of the modern text-books on otology gives but little practical information on the subject of aural massage. Many speak highly of its value in various conditions of the middle ear, but hardly one gives directions which a tyro could safely follow. While a large number of magazine articles have appeared on the subject, almost none deal with the technique of and special indications for the various procedures, a brief review of which is the object of the present paper.

Aural massage is by no means a new therapeutic measure; Cleland, in 1741, spoke of treating deafness by exhausting the air in the external auditory meatus, and in 1794 an unnamed writer described the cure of many cases of deafness by fitting a tobacco pipe-stem tightly onto the canal, and making rhythmic suction with the mouth. As may be said of eight-tenths of the therapeutic methods of modern aural surgery, Politzer was the first to put ear-massage upon a definite basis, in the earliest editions of his books, highly recommending suction and release by a rubber bag and piece of tubing, fitting into the canal, in middle-ear catarrh.

Aural massage may be divided into three forms: direct vibration of the drum and ossicles by various types of probe (Lucae's method); pneumatic vibrations by many forms of suction apparatus, including the operator's mouth; and sound-vibrations carried to the drum by appropriate ear-pieces from some form of sound-producing apparatus. The successful application of Lucae's method calls for the very highest special surgical skill and delicacy of touch, used in any other manner it becomes unbearably painful to the patient and most grossly harmful in all cases; this is probably the reason why authorities differ so greatly in their opinions of its usefulness. The instrument recommended by the inventor is cumbersome, and is not usually for sale in this country; the writer much prefers a simple, light, steel applicator, on the end of which is firmly and tightly wound a very small tuft of cotton, whose extremity is slightly cupped by pressure on any convenient body about the size of the short process of the malleus. Under the fullest illumination and inspection, with the motion of the wrist unimpeded by

clothing, the probe is applied over the short process, or on the fold immediately along-side it, and gentle rhythmic pressure of about three beats per second made. Active hyperemia almost at once occurs at the point of pressure, and as soon as it shows the least tendency to spread over the manubrial plexus the application should be stopped.

Pneumatic vibration is by far the safest, simplest, and most useful method of aural massage. It can be applied by any one sufficiently skilled to treat the ear at all; it need never be in the least degree annoying to the patient, and it is about the only treatment of any real avail in several forms of aural disease. A large number of types of apparatus have been devised for its application, varying from a simple rubber tube, with an ear-piece for the patient and a mouth-piece for the operator, to very elaborate and expensive instruments driven by electric or other motors. A very important defect in many of the masseurs sold is that the ear-piece is a simple cone with no provision for watching the drum during the *séance*. Marked injury frequently results from this defect, extensive ecchymoses being sucked out upon the drum or walls of the canal, with resulting pain and injury to hearing. Whichever form of pneumatic masseur be employed, it is in the writer's opinion absolutely essential that the ear-tip should be some form of the speculum invented by Siegle, and known by his name. This instrument consists of an air-tight case fitted to a special speculum, the surface opposite the observer, when the tube is inserted in a patient's ear, being of glass. Under illumination a perfect picture of the aural fundus can thus be obtained, and as the instrument can be easily adjusted to any reliable pneumatic masseur, the results of passive motion can be thoroughly watched. The speculum portion of the Siegle instrument should always be covered by a piece of soft rubber tubing, this makes an excellent air-tight washer, and much lessens the pain of tight insertion. The tip of the instrument is introduced with a gentle screwing motion, and when air-tight massage should always be begun by *suction*, never by *pressure inward*. It should be an invariable rule that vibration should never be continued longer than is sufficient to cause a very slight blush of the manubrial plexus, active and dangerous congestion soon following if continued beyond this point. Three forms of pneumatic masseur are used by the writer; first, the Delstanche spring syringe, which answers well for purposes of diagnosis, or for brief treatments, the quick tiring of the operator's hands, if many patients are seen, being almost the only drawback of this excellent instrument. Second, a small, vertical compressed air-engine of about one inch stroke and three-fourths inch diameter of cylinder. This apparatus was designed by Charles Lentz & Sons, of Philadelphia, and has been modified into a practical instrument according to

the writer's suggestion. It is well suited to prolonged routine treatment, as the rate of vibration can be varied from one or two to ten or twelve per second, and the perfect rhythm is much better borne by patients than the uneven motions of even the best trained hands with the Delstanche masseur. Third, the electro-motive vibrator of C. Jackson, which consists of an oscillating cylinder, with balance-wheel, driven by an electric motor. This is a very gentle and a very effective instrument, and about the only one of value where it is desired to use vibrations of higher speed than ten to the second; when in perfect order, Jackson's instrument is capable of very high speed,—probably up to fifty strokes per second,—and is perhaps the most valuable single instrument at our command. After years of trial these three instruments have been found by the writer to best supply all needs, and are vastly more satisfactory than either the old-fashioned rubber ball and plain syringe types, or the modern nuisances of 'phones and 'ometers and the various forms of telephone vibrators.

Phono-massage of the ear by means of more or less elaborate apparatus, to carry more or less musical vibrations directly into the canal, seems to have been finally abandoned by about every otologist whose opinion now carries weight. Not one high authority has ever reported good results from their use, and certainly in the writer's hands they have been only dismal failures, and in several cases decidedly injurious. Their sole usefulness is along the well-known lines that an ear, like any other organ, unused undergoes degeneration, and many partially deaf children grow absolutely so from lack of *use* of hearing. But such methods can hardly be called *treatment*, since rarely or never does the hearing improve, but merely *retains* that power of hearing, provided no further disease is going on. The phono-massage instruments also are not at all suited to this purpose, conversation-tubes, like that of Maloney, being far more satisfactory. The claim, easily demonstrated, that phono-massage frequently arrests tinnitus is of absolutely no value, since almost anything that can be done to an ear may, in some cases, stop ear noises for hours or even days.

The diseases in which aural massage is useful may be broadly stated to be all conditions of the middle ear which have resulted in stiffening of the drum, or any part of the chain of ossicles, and which are not accompanied by any active inflammatory process. It is the writer's emphatic opinion that all forms of vibratory massage of the ear are absolutely contraindicated by the existence of any active congestion, inflammation, or consequent secretory disturbance, and their use under these conditions is responsible for many of the evil results occasionally reported. The general effects of scientific massage in other regions of the body in reducing adhesions, promoting absorption, and

mobilizing stiffened organs, are too well known to need repetition here. One of the latest applications is in the reduction of enlarged tonsils, very favorable results having lately been reported from digital massage in this condition by Kantorowicz. These results are at least as great in the ear as in any other region of the body. In the latter stages of *acute catarrhal otitis*, where the inflammation has subsided and the Eustachian tubes are fairly patulous, but slight deafness persists, pneumatic vibration is of the greatest use. Rapid vibrations of great gentleness, say ten to the second, preferably with the Jackson instrument, are of the most benefit. They may be used for about forty-five seconds every second day for as long as necessary, which is generally not longer than ten days. The drum must be watched throughout the *séance*, and treatment at once stopped if the slightest reddening result. *Chronic otitis of purely catarrhal type* with the ground glass drum, moderate deafness, and tinnitus, offers perhaps the most favorable field for the good effects of aural massage. Such cases may be treated daily or bi- or triweekly for a term of two to four weeks. If there is considerable stiffening, slow rhythmic vibrations, some two to four per second, continued until faint blush of the manubrial plexus appears, seems to give the best results, and the writer's air-motor is now used exclusively by him for this purpose. Should the slightest degree of real pain, vertigo, or increased tinnitus result, the treatment has been rough or excessive, and has occasioned harm rather than good. Accompanied by proper treatment of the naso-pharynx and the *careful avoidance of inflation by the Politzer bag or catheter*, such management results in very satisfactory cure of many early and middle-stage cases of this common and insidious disease. In *true aural sclerosis*, with drum thickened or atrophic, adherent in part to ossicles or promontory, with tense folds and widely opened Eustachian tubes, pneumatic vibration is almost our only means of diagnosis and relief. The Delstanche instrument, used slowly, is essential to an appreciation of the actual condition of the drum and ossicles; if under suction the entire drum moves forward through nearly its normal area of motion, general stiffening only has occurred, and the prognosis may be good, and gentle pneumatic massage is indicated. If the drum as a whole is nearly immobile under the full suck of the masseur properly fitted, very extensive adhesions have taken place, the prognosis is very unfavorable, and treatment will be of but little avail. If the malleus is slightly movable, but the drum bulges out in balloon-like form, the latter is atrophic, ossicular adhesions have occurred, and mobilization by Lucae's method is often valuable. In addition, localized points of adhesion may be easily diagnosed, and an idea formed of the vascularity or irritability of the tissues by the length of time required to produce

reddening. Advanced cases of true aural sclerosis are the only ones where even the most skilful form of *forced massage* is ever allowable; with the Delstanche apparatus it is sometimes possible to actually break up small adhesions, which may be kept from reuniting by daily use of the same instrument. Other cases of almost complete immobility of the malleus may be gradually limbered up by fairly energetic use of the masseur, always, however, stopping short of producing ecchymoses, marked pain, or vertigo. It is also in these cases alone that Lucae's instrument is ever used by the writer. When the folds are tense, the malleus very stiff, and the drum atrophic and flaccid, direct vibrations by the method previously described are certainly often of benefit. Three cases under the writer's care have within the last few weeks been much improved by biweekly *séances* with the probe, after failing to improve at all under milder methods, and some scores of similar cases might be reported. In sclerosis only is daily massage generally well borne; in the cases where the drum is fairly tense, not adherent, and the malleus still mobile (which is the average type of sclerosis cases), fairly vigorous vibrations by the air-engine, continued until the manubrium is slightly reddened, may be used daily for a week or two with great benefit. The intervals between treatments may then be increased, until the limit of improvement appears to have been reached. Patients suffering with this essentially incurable disease should always be instructed to report at least every six months, —when a week of massage and nose and throat treatment will often speedily double the slowly failing hearing.

To close the list of the various types of "aural catarrh," the fibrous degeneration, as it may be called, of the ears in old age can be retarded by no other method known to the writer than pneumatic massage; by its persistent use the dreaded onset of deafness can often be retarded to such an extent that swiftly failing hearing may be kept in *statu quo* for an almost indefinite period. A very few writers have used and lauded pneumatic massage in the treatment of *chronic suppurative otitis*, but they have had few followers, and the present writer regards it as injurious as unscientific in this disease. The very slight beneficial effect, better attained by other means, secured by the sucking out of secretion, is heavily overbalanced by the evil effect of drawing more blood into an already sodden and congested membrane. In cases of suppurative middle otitis, which have been *cured* of discharge for a period of months, and where not the slightest congestion remains, massage is, however, a most useful measure. Rapid and gentle vibrations give the best results, and the manipulations must stop short of the slightest reddening of any part of the fundus. Very marked improvement in hearing often results from a few weeks of triweekly

treatments, and the prognosis is often much better for hearing in these cases than in many of purely catarrhal origin.

In conclusion, the writer would again insist that good results cannot be expected of vibratory massage, except from trained hands and careful technique, and that the aural masseur is quite as capable of harm as good if used without careful study of the case.

A CASE OF ATAXIA FOR NOSOLOGICAL DIAGNOSIS.[1] PROBABLE PROGRESSIVE MENINGO-MYELITIS (CEREBRO-SPINAL).

By F. Savary Pearce, M.D.,

Instructor in Physical Diagnosis, University of Pennsylvania; Chief of Medical Clinic, St. Agnes's Hospital.

The following case is here reported in detail with the hope of gaining a clearer understanding of the sequence of the pathologic process involving the nervous system, so widespread, in which ataxia is the predominating symptom. The previous history is so inconsiderable, too, that etiologic study from this limited source is practically *in nubibus.*

A. G., male, aged 22 years, presented himself to the Howard Hospital May 17, 1898, when the following history was elicited through his mother.

Family History.—No hereditary diseases are known except in the present generation. A sister became deaf, following "earache," at the eighth year, and remains so, though otherwise healthy. There are four other brothers and sisters, all well. One child died at birth, one at five years, of scarlet fever, one at twenty-eight years, of some stomach trouble. The father is living; is a drinking man. Mother is well.

Personal History.—The patient shown to-night is the fifth child; was apparently healthy at birth. Never had convulsions. He had the ordinary diseases of childhood in mild forms. At 8 years of age he too, like the sister referred to above, began to become deaf without known cause, and in a few years was unable to hear ordinary sounds, so that he learned to get conversation from the movements of the lips, his own voice remaining in good modulation.

There is pretty positively no venereal infection in the case.

Previous symptoms of his present trouble could not be obtained with any intelligence until I had his eyes examined by Dr. William

[1] Read before the Philadelphia Neurological Society, February 27, 1899.

Campbell Posey (whose report I append), and who had gotten the following facts from the boy's sister on June 21, 1895, when the boy had reported on account of failing vision. "About January, 1895, he was struck in the right eye by a piece of steel. The eye was inflamed for several days thereafter, and vision blurred. He then complained of intense headache, supraorbital in type, and of attacks of dizziness. He had never fallen or vomited. Pupils were then two millimetres and irides were irresponsive to light and accommodation stimuli. After the pupils were dilated with homatropine, a large retinal detachment was found in the right eye below, associated with marked swelling of the head of the optic nerve. The retinal veins and arteries were much contracted; vision was reduced to light perception. In the left eye the disk was also swollen and was gray in the deeper layers. Vision in this eye was 5/15 (?). The field was slightly contracted for form and colors. The patient was placed on potassium iodide in ascending dosage and referred to Dr. Hamill at the University Hospital."

When I first saw the boy and found his reflexes everywhere lessened, as will be cited, he voluntarily remarked that the knee-jerk used to "jump quickly." This certainly did not obtain within the last three years, as Dr. S. McC. Hamill writes me as follows: "I find by reference to my case-book that I saw A. G. three times, in June and September, 1895. I infer that he had not spastic reflexes at this time, as I find no note to that effect. His chief nervous symptoms at the time were severe headache, vertigo, and his eye condition. There is nothing further in my notes, I imagine, would be of special interest to you. His urine, examined at that time, was found to be entirely normal. His heart and lungs were in normal condition, and he had very marked intestinal indigestion."

When seen in November, 1898, marked rotary nystagmic movements were present in both eyes. Pupils were pin-point in size. He complained of having great inability to walk for over two years, and was typically and markedly ataxic in the movements of his legs, arms, and hands. There had been no acute exacerbation nor any intercurrent disease within the past four or five years to account for this. The whole process seems to have been insidious, with the possible exception of the supposedly rapidly developed eye lesion, following a blow.

Station was very bad. He could not stand more than a few seconds with his eyes closed, and swayed widely and irregularly when feet were placed in position of attention.

The knee-jerks were absent, but slowly responded on strong reinforcement. Muscle-jerks were everywhere lessened, and elbow-jerks sluggish. Grasp was good and equal. His muscles everywhere were

illy developed, and skin cold, clammy, and "hidebound." There was little subjective pain, but a continual tinnitus aurium and a feeling of formication throughout the surface of the body and the same obtunding of general sensibility (hyperesthesia), as proven too by scars on his body, which he affirmed he did not feel in the making from his stumbling about, especially at night. There was a saddle-shaped area in perineum, extending to anterior half of scrotum and to two inches dorsal to the rectum, and extending down the inside of right thigh four inches, and inside of left thigh six inches, where all sorts of sensation were particularly obtunded, heat and cold being often confounded. There was no spinal curvature, kyphosis, or tender spots. A trophic ulcer, size of a half dollar, was on the left buttock, with scars on left leg. There are no myopathic, acromegalic, or syringomyelic signs demonstrable. His intellect is queer; he is at times easily excited and vicious. He has no hallucinations or determinable delusions, but complains constantly of gold specks and other muscæ volitantes. Cannot hear a watch on contact in either ear; does hear it in the left ear when held between the teeth. There is no evidence of external aural disease, and the constant tinnitus with this would rather signify central origin.

His digestion is fair; at times suffers from wind dyspepsia. Bowels are rather costive. Urine at times, passed involuntarily, is loaded with urates, contains much molecular *débris*, and gives a marked indican reaction.

Heart is rhythmic; no murmur; pulse synchronous. Respirations at times arrhythmic and shallow. He sighs much, as if in attempt at oxidation by accessory inspiratory efforts.

On November 20, 1898, Dr. Posey's eye examination was as follows: "Marked rotary nystagmus, both eyes. The anterior chambers are shallow and irides do not react to light or accommodation. The neuritis in right eye had now subsided and the disk has become atrophic. The retinal vessels are much reduced in size and are the subject of low-grade perivasculitis. After the left pupil had been dilated with atropine, marks of an old iritis made themselves evident. The disk is dull red-gray in tint, and the arteries and veins are somewhat reduced in size. Hypermetropia equals two diopters. Down and out there was quite a large area of choreo-retinitis. Vision in right eye was reduced to light perception. That in left eye = 5/18 (?). There was a slight concentric contraction in the visual field for form, whilst that for red was cut down almost to fixation. No scotoma could be elicited."

On May 12, 1898, the patient was placed on Donovan's solution, five drops three times a day; with coördinate movements. On June

14 he had already gotten better control of his voluntary movements. The ulcer now began to heal and knee-jerks were more easily reinforced. By July 5, 1898, knee-jerks became capricious, at times responding without reinforcement. He was now put on potassium iodide, five grains, gradually increasing, three times a day, to a drachm in twenty-four hours. During the summer he improved much.

Status Præsens.—Now his knee-jerks are responsive at times without reinforcement, but are remarkable for the slowness of response after the blow is struck; are reinforced much more than ever before, but easily exhausted, as is his general strength, although, at times, he is manifestly spasmodically powerful even, as though inhibitory centres were much implicated. His mental state is no better.

Conclusions to be reached in this perplexing case are by no means certain. That there was a cerebro-spinal, slowly-progressing meningomyelitis seems theoretically problematic; leaving a resultant secondary, tabetic, precocious ataxia prominent. The central otitic disease (two in a family), with sequent optic neuritis without frank choked disks, plus the descending ingravescent spinal phenomena, would rather suggest heredity in an unstable nerve protoplasm, as the pathogenesis of a general nervous system degeneration.

I have to thank Dr. J. Madison Taylor for permission to record this case, which occurred in the clinic for nervous diseases of that gentleman, as indicated.

[Note.—At the meeting of the society opinions were expressed as to the above case being one of probably hereditary specific disease, especially involving the cerebellum; or of a general gliosis.]

Bactericidal Action in the Mouth.

Hugenschmidt (*Centralblatt für innere Medicin*, December 10, 1898) tested the action of human saliva after passing it through a Chamberland filter, in order to free it from all germs, and found that it then had no bactericidal power worth mentioning. The saliva has a chemotactic influence on the leucocytes, which leave the numerous lymph-vessels of the mucous membrane of the mouth and throat in consequence of this influence and mix in the saliva. Their phagocytic power makes a bactericidal agent of the saliva. Perhaps even a more important protection against the entrance of pathogenic germs through the mouth into the system is found in the great numbers of saprophytes in the mouth, which find in the saliva a better medium for their growth than do the pyogenic organisms, and which, therefore, outgrow the latter.—*Medical News.*

BICHLORIDE-OF-MERCURY INJECTIONS IN THE TREATMENT OF ABSCESS AND PURULENT INFLAMMATIONS OF THE TEAR-DUCT.

By J. Winter Wamsley, M.D.,

PHILADELPHIA.

In the treatment of many cases of stoppage of the tear-ducts it is often difficult to keep them permanently patulous, change the chronic formation of purulent discharge, cure abscess of the sac often pointing on the surface, where it breaks, leaving fistula, and to relieve a chronic secondary catarrhal conjunctivitis and epiphora.

A few cases will be cited illustrative of some principles of treatment gained by mistakes and experience. Chronic conjunctivitis, trachoma, and marginal inflammation of the eyelids are prone to cause thickening of the mucous membrane, and consequent swelling of the puncta. This is enough mechanical inconvenience to produce epiphora, if not the continued thickening in the tear-duct, and consequent narrowing of its calibre; even though the bony canal be large, and the lining membrane chronically inflamed and thickened, it is then most difficult to keep patulous; a good-sized probe can, with moderate force, be often passed, but on its removal the swelling and narrowing quickly return.

Cases of simple chronic catarrhal conjunctivitis, with epiphora caused by swelling of the mucous membrane about the puncta, impede the proper drainage of tears, and the practice of using the silver conical needle to dilate only accomplishes temporary, if any appreciable, good as long as the general inflammatory state of the eye exists. When such inflammations, which cause watery eye, photophobia, irritation, etc., subside, the swelling of the puncta also disappears, and natural flow is re-established, if there be no further impediment in the canal; but should secondary permanent thickening of the eyelids take place, following various local inflammations, it usually causes a permanent swelling of the puncta, in which case slitting of the lower canaliculus will generally effect the desired result, if the incision is carried well into the sac; and it is always better in these cases to pass a small probe into the duct to detect any narrow portion which may exist, or to use the lachrymal syringe. The directions for passing a probe or slitting a canaliculus are difficult to illustrate in writing.

To pass a knife or probe along the canaliculus from the puncta to

reach the sac, the eyelid should be stretched from the outer lower canthus, with the fingers of one or the other hand, to avoid puncturing the membranous lining, and better direct, by its straightened canal, the point of the instrument to be introduced. The instrument should be inserted well into the sac or passed to the inner canthus until it meets a direct obstruction, and should be directed somewhat horizontally backward, then turned up at a right angle to the first position, and with one finger of the opposite hand placed on the skin over the superciliary ridge, the lax skin drawn tense to avoid puckering of the membranous lining. Very often the probe is passed forcibly into the canal, the point injuring the floor of the nose, producing much soreness and tends to aggravate the patient much more if the probe is passed in the same way every time.

False passages are usually made by turning the direction of the instrument before the sac is reached and pushing with force at random; in most instances the instrument passing through the thin plate of the lachrymal bone; in some cases the anterior portion being no thicker than paper, for this reason the instrument should be always directed slightly backward to meet the harder portion of the bony wall of the canal, instruments are often passed between the bone and its covering.

After the first operation for stricture of the tear-duct, either with knife or probe, I have had better results by using a piece of lead wire inserted directly after, and worn about a week before treating systematically with probes; dilatation takes place much easier after the preliminary treatment. The following case is illustrative of this principle:

Case I.—A man, aged 31 years, consulted me for treatment of weak eyes. He had been much inconvenienced for three years, and during the last year he was much annoyed from overflowing of the tears in his right eye. There was present a chronic conjunctivitis in both eyes; and pressing the sac of the right eye, there exuded a quantity of muco-pus; there was no trouble with the sac of the left eye. The patient was first refracted under scopolamine, and the refraction proved the condition to be one of low myopic astigmatism. The duct was opened first by slitting the lower canaliculus; then followed with a small probe, passed only as far as the juncture of the sac with the duct, a hard bony constriction was found; and as the probe could not be passed beyond the interference, a Stillings knife was used, and with much probing and cutting a little separation was made, and a No. 6 Bowman's probe inserted; the stricture grasped it very tightly. A piece of lead wire was then introduced, about the same size as the probe, and allowed to remain in the canal. No great pain was experi-

enced by the patient from the operation and no inconvenience from wearing the lead wire.

In about a week the lead wire was removed for the purpose of cleansing. Water could not then be injected into the canal, which would pass through an exit from the nose, but the water disappeared on slight pressure from the syringe, and passed into the cellular tissue, going in from some spot of erosion, caused by the operation, the injection at once produced an edema of the lower eyelid; this often happens if forcible injections are made shortly after operations or probing; if the canal is not very patulous, the edema is absorbed within a few hours, and often leaves a bruised appearance of the eyelid from subcutaneous hemorrhage. In the above case, injections could not be made through the canal, neither could the lead wire be reintroduced; the patient could not stand the least manipulation; extreme soreness had developed, and at this stage after operation treatment is most difficult. The lead wire had to be reintroduced; if allowed to remain out with such a narrow stricture the canal would soon again become obliterated. The patient was given ether and the lead wire reinserted, and worn three months without its removal, after this time it was again taken out; no soreness or irritation had developed from its use; water was then injected into the duct, which was patulous, and found ready exit in the nose. Systematic dilatation was attempted with Theobold's probes, but with extreme force only was a No. 8 probe introduced. The canal remained open. The drainage was re-established; and the chronic conjunctivitis cured.

Cocaine locally or hypodermically, has little or no effect in relieving pain of various operations on the tear-duct; greasing probes with strong cocaine ointment is of little use to relieve pain. For a young and strong patient it is better to perform the operation without any anesthetic, and also in the aged where ether and chloroform would be dangerous; in some very few cases it is better to give a general anesthetic.

As a cleansing injection for the lachrymal canal I prefer Dobell's solution or warm water, and if a purulent state exists, with intermittent discharges of pus, I use an injection of bichloride of mercury 1 to 1000, using cocaine first; great pain sometimes occurs if solution of this strength comes in contact with the cornea. In the use of injections for cleansing the canal, the point or cannula of a syringe should not be passed into the duct for two reasons: first, the point or cannula of syringes for this purpose are usually made of metal and sharp on the end, which often cause, while they are in use, abrasions of the mucous lining, which abrasions give better access to fluids which are used for injections to penetrate the orbital cellular tissues; secondly, lachrymal

syringes commonly have a long cannula, and this is first passed to the sac and then down the canal, in which position the syringe is discharged of its contents, which passes from the nose without coming in contact with any portion of the canal, unless the syringe is slowly withdrawn. A sure way of good effect of washing the duct, and to prevent the injections penetrating the cellular tissue, is not to use a syringe until sufficient time has elapsed to heal abrasions of the duct from the original operation, lead wire being used in the mean time or probes carefully passed, not using one so large that it would cause tearing, and when it is time for cleansing or curative injections to be used a short cannula syringe should be selected, that the point will not pass into the canal but only into the sac, and sufficiently large and conical to block the opening to prevent egress of fluid through the canaliculus.

The following case is illustrative of good result from opening externally an abscess of the lachrymal sac, and injections through an artificial opening:

Case II.—A woman, 38 years of age, had recurring abscesses of the sac of the left duct during the last two years. Home remedies were applied, such as various poultices. The abscess usually broke externally and disappeared seemingly without leaving a fistula. The abscess was formed at the time the patient consulted me for treatment, the tear-duct had been stopped during the last two years, accompanied by the abscess.

Treatment was done in the following manner: The canaliculus was slit with Weber's knife, and passed well into the sac, then into the canal and withdrawn; the contents of the abscess was discharged into the duct by external pressure; lead wire was introduced and worn with comfort, it being occasionally removed and the duct washed with cleansing lotions. At times, during treatment, the abscess cavity would refill and bulge externally, the accumulation of muco-pus could always be discharged into the duct with pressure. Various means were tried to prevent these accumulations, and a sharp-pointed curved canaliculus knife was passed into the duct and puncture made from the inside at the site of the external bulging; but with all attention to treatment, as injections into the canal, the wearing of lead wire, and on few occasions a cannula was worn, at other times without anything being worn in the canal, with regular repeated washings, there seemed to be the same chronic formation of muco-pus, although in much lessened amount.

The next step was to open the abscess cavity externally. Carious bone could be felt with a probe passed into the duct, which in all probability was keeping up infection and irritation; externally a puncture was made with a sharp-pointed bistoury over the abscess bulging, and

a drop of pus exuded; a syringe was filled with a solution of bichloride, 1 to 1000, and the pointed end of the syringe introduced into the opening made externally. On forcing the injection a quantity of muco-pus, diluted with the fluid, was washed out through the duct, most of the fluid coming from the canthus. After cleansing the abscess cavity, lead wire was passed into the duct, and the external wound closed with a few strands of cotton, and sealed with flexible collodion. For one week following the use of the bichloride injection there was entire cessation of the muco-purulent discharge, and when it showed signs of its returning, the injection of 1 to 1000 was repeated, always external through the abscess cavity, the solution usually bringing away a small quantity of material which in any other manner could not be cleansed or brought away. A new opening, externally, had to be made with a bistoury every time injections were to be made. After use of injections the opening quickly closed from stimulation of the tissues, and also the slight swelling which helped to form pressure. Injections of solution of bichloride causes a mild stimulation of the parts with which it comes in contact, seems to destroy pyogenic foci; also in this particular case the benefit of these injections can be seen from the length of time the case lingered before injections of bichloride were made.

On three occasions only were injections made in this case during a period of two weeks; in one month the patient was well. The systematic use of Theobold's probes was continued all through the treatment of the case; a No. 14 probe was the largest size passed.

Once a week the probe was passed and this was continued for several weeks after the abscess had disappeared.

Another case illustrating the value of the stimulating action of bichloride injections was in a woman, aged 35 years, subject to discharges from the sac of the right duct for seven years; abscess of the sac had never occurred, only the annoying muco-purulent discharge from the inner canthus, which could be best seen on pressure. The patient had atrophic rhinitis, and a little offensive odor. Weber's canaliculus knife was passed into the canal and followed with a large probe, the canal was found to be quite large. Antiseptic injections of Dobell's solution, boric acid, etc., were used, and with much attention to the treatment of the nose, it being in a catarrhal state; but without this the mucoid discharge would return. As the treatment was tedious and without much permanent good being accomplished by these measures, I determined to give injections of bichloride and repeat if it be found necessary; a syringe was filled with the solution and injected into the canthus, which passed freely out the nose; slight irritation developed at once, and, with cessation of the discharge, the condition showed a tendency to cure at once.

The patient neglected regular treatment and has now a slight return of chronic discharge, but not to compare with the original amount and condition before use of bichloride injections. Undoubtedly in this case the site of infection comes from the nasal catarrh. In the first case, of bony stricture, the importance of wearing the lead wire is shown, and it should not have been removed after it was first introduced for at least two months.

It was not mentioned before that the patient had chronic nasal catarrh, which had to be persistently treated to keep the mucous membrane in a healthy condition, and to prevent infection from this site to the membranous portion of the duct. The case of abscess of the lachrymal sac is an illustration of the benefit of quick action of injections through an external artificial opening. In the usual inflammatory state of tissue about an abscess, and that which injections of bichloride is apt to produce, there need be no fear of causing fistula by the principle of syringing through an external artificial opening in the abscess cavity; in this way the most cleanly condition can be maintained,—more amount of accumulated purulent matter can be dislodged, as is seen during its application.

In cases of chronic purulent discharge, not accompanied with abscess, mild stimulation with bichloride injections does good, the injections to be repeated as the case requires; one injection a week or once in two weeks, many cases yielding to even one or two injections, as it was in the last case mentioned. All sources of reinfection should be rigidly looked for, particularly any form of nasal catarrh; such conditions should be persistently treated in conjunction with the general treatment for most diseases of the lachrymal apparatus, which are caused by infection or which are likely to be infected.

Complete Rupture of the Trachea.

A case of this rare accident is mentioned in the *Lancet* for October 8. The subject was a man 73 years of age, who was struck by an elevator on the back of the head as he was looking down the shaft. He was knocked down and the sternum broken, but survived the accident fourteen days. The rupture of the trachea was discovered at the autopsy. Several cases are on record, the principal symptoms being urgent dyspnea and much subcutaneous emphysema, and the result usually death. Three cases of recovery are, however, recorded, says the *Lancet*, two by Lany and Wagner without, and one by Lauenstein with, tracheotomy.—*New York Medical Journal.*

OUR DUTY TO DEGENERATES.[1]

By J. Newton Hunsberger, M.D.,

SKIPPACK, PA.,

President of the Montgomery County Medical Society.

As this is the first year in which your retiring president has been required to make an address, he finds himself in something of a quandry.

Precedent plays a greater *rôle* in our lives than we usually realize. We are all imitators, unconsciously and unwittingly, perhaps, but imitators nevertheless,—an inherited trait of our simian ancestors.

You will bear with your ex-chairman, therefore, if he disappoints you, and lay all the blame to the lack of precedent.

How many years this world has been peopled with responsible human beings must always remain a matter of conjecture.

That the biblical Adam and Eve were our first parents is only figuratively true; that they were the offspring of a lower type is so generally recognized among scientists as to admit of no discussion; that one of their offspring should be a murderer shows the savage disposition of their ancestry.

Is not that same strain apparent in man to-day? Are we not hedged in with forms and conventionalities that hinder us from following our natural tendencies?

History, both sacred and profane, is filled with the acts of men, who, at the time, were representatives of the best classes, that for heinousness and atrocity exceeded the wildest dreams of the most degenerate savage.

These opportunities were not always of their own seeking, but were grasped eagerly when they came. Instance the Spanish Inquisition, the French Revolution, and allied examples innumerable.

But wicked as we all undoubtedly would become if chance would offer or environment allow, there is a class who bear the brand of Cain so prominently as to stand alone as a diseased portion of our body politic,—the moral lepers of our commonwealth. I wish to call your attention to this class.

We allow prelate and priest to lull us to a sense of irresponsibility and security. They teach us that religion and the church are the remedies for the criminal classes; that it is only a question of time

[1] Read before the Montgomery County Medical Society, January 18, 1899.

until all will be Christianized. That the church does a grand work we all know; that it hedges us in and restrains us from following our natural bent; that it is the sheet-anchor of good citizenship; but that it ever reaches the criminal classes or the degenerate is a matter of honest doubt.

The church bends all its energies to prove that every human body possesses an immortal soul, and unless it becomes perfect in morals and truth, in this world, it is doomed to everlasting punishment. It proceeds on the theory that every sane individual is responsible for his acts in the flesh, and must conform to certain laws constituting a moral code. The land is flooded with reformers, devising schemes for civilizing, educating, and elevating the ignorant, degraded, and degenerate. Praiseworthy as their efforts may be, their successes do not stand out very prominently. Their conceptions of civil, moral, and religious duties may have been of value a few generations ago. They seek to abolish the evil conditions existing, neglecting to remove the cause. The fact that man has a soul seems to make them forget that he is intensely animal, and while trying to lessen the resulting evils are simply enlarging and increasing the causes.

I believe it is the sacred duty of physicians, as the only body of men who appreciate fully the *rôle* that heredity plays as a factor in sociological questions, to spread broadcast the knowledge, with the remedy for the disease, that is eating like a cankerworm at the foundations of society.

We have quarantine laws, we have sanitary laws, we have laws that guard against future ills as well as present evils; we do not build for a day with these. But when we come to restrict marriage between people who are unfit, and by the laws of heredity unable, to bring forth healthy offspring, to castrate habitual criminals, imbeciles, or the criminally insane, we find our reformers and law-makers holding up their hands in holy horror.

The state sanctions and the church blesses unions of the human family that would be simply unthought of in domestic brutes. They defile God's holiest temple by sanctioning the union of the unclean. "Heredity is law;" "men do not gather figs from thistles or grapes from brambles."

Are we, as humane physicians, adding to the betterment of society and the advancement of a perfect race by taking such good care of defectives as to permit them to grow up to produce defectives in turn? Should not nature's law of the survival of the fittest be our guide in the care of such? A question that wiser heads than ours will be called to answer at a not very far distant day. Let me quote Judge Reeves, of Indiana, on the subject of marriage of defectives:

"In regulating marriage, the law says that none shall marry within the third degree of consanguinity, and in some States the fourth, because marriage between near blood relatives is likely to produce offspring deformed or diseased, physically and mentally. Insane and idiots shall not marry, because they cannot make a contract, and because of hereditary tendency to produce idiots and insanity. It makes it a crime to marry in any of these cases. In this it aims to prevent degenerate offspring, and protect individuals and society against the evils that would attend such offspring.

"But if the vilest mortal that can live—one not in these classes—sees proper to marry, the law issues the license for the asking, taking a fee, makes a record, and leaves the offspring and society to shift for themselves in the best way they can. The confirmed inebriate, the weak-minded and semi-idiotic, the confirmed criminal, the offspring of the half-witted and insane, if lucid at the time, the incurably diseased, the scrofulitic, the syphilitic, the hereditary pauper, the depraved and reckless—even paupers while in the poor-house and criminals while in jail—are in every way encouraged, given license, and protected by law.

"No thought is taken for the unfortunate offspring, nor for the body politic or social, and the irreparable evils that must fall upon all. The church adds its sanction, and its ministers aid in making these civil contracts by performing the ceremony with benediction and prayer.

"If it is wise to prohibit polygamy, marriage between near relatives, between the insane and idiotic, because of heredity and transmission of evils, it is equally wise to prohibit it in all cases when like evils may follow. If the law has the power to prohibit and punish violations in one case, it has equal rights in all others.

"There is an endless procession of children from all these sources coming into the mass of population to live lives of crimes, immorality, want, suffering, misfortune, and degradation, transmitting the taint on constantly ever-widening streams, generation after generation, with the ultimate certainty of the deterioration of the race, and final irreparable degeneracy."

That this is not the cry of an alarmist statistics showing the increase of crime in the United States prove. According to the census of 1890 there were in this country, in 1850, 6737 prisoners, or one to every 3442 of the population. In 1890 there were 82,329 prisoners, or one to every 757 of population. While the population shows an increase in forty years of 170 per cent., the number of prisoners has increased 445 per cent. Added to this must be a large number of criminals who have not been apprehended or have escaped confinement by a miscarriage of justice.

At the present rate of increase it does not require much knowledge of mathematics to satisfy the most ardent believer in the nearness of the millennium, that his premises are false, and that he needs to be aroused from his lethargic state of security.

Something is "rotten in Denmark." Is it our system of jurisprudence, or is it due to perversion of the law by expounders of the law, who defeat justice, but save their clients.

That something is radically wrong the tremendous increase in crime—about 300 per cent. gain over increase of population—does prove beyond all power to controvert. Heredity is seldom or never recognized in the eye of the law, environment sometimes is, and should always be.

Lombroso claims that criminals are born criminals, and must therefore be treated as diseased individuals. His arguments are hard to refute. An individual born an idiot is not recognized as a responsible being in the eye of the law,—neither should a degenerate be so recognized.

The division into lunatics and idiots of a hundred or two hundred years ago should not hold to-day. We have *many forms* of idiocy and lunacy, aside from degenerate changes in individuals, from various causes, that should be recognized by courts and treated as diseased conditions, just as idiots and lunatics are supposed to be treated to-day. I do not mean that irresponsible degenerates or defectives should be allowed at large after committing a misdemeanor, but that they should be colonized or placed under some restraint, and if ever allowed their freedom to be first castrated.

The reports of penitentiaries are filled with accounts of criminals who are serving more than one term of imprisonment, whose genealogical tree, if traced, would be filled with criminal, defective, and degenerate beings. We do not hesitate to take a poor, inoffensive leper, tearing him from all he holds dear on this earth, and condemning him to a most horrible exile with his kind, and yet we allow criminals, degenerates, and defectives of all kinds to propagate their kind indefinitely.

Let me call your attention to the well-known report of Mr. Dugdale, of New York, who, in his visits to the various prisons, found in one six persons incarcerated for crimes, between all of whom there was a family relationship. On further inquiry, he found that of the same family there were twenty-nine relatives in the vicinity, seventeen of whom were criminals; still further inquiry elicited the following facts: Within seventy-five years a family of 1200 persons have sprung from five sisters, several of whom were illegitimate, and three of whom were known to be unchaste, and who married men whose father was an idle, shiftless hunter, a hard drinker, and licentious.

Of this family the history of 709 was traced. Paupers, 280; years of pauperism, 798; criminals, 140; years of infamy, 750; thieves, 60; murderers, 7; prostitutes and adulterers, 165; illegitimate children, 91; number of syphilitics, 480; cost to State in various ways, $1,308,000. This is, of course, an imperfect history. I might mention a report from Berlin, of the offspring of one vicious woman, about 1000 in number, who made an equally bad record as the Jukes family just quoted.

These are, of course, striking examples, which could be multiplied almost indefinitely, which occur everywhere and are sowing the seeds of degeneracy broadcast.

All of us have come in contact or know of sexual perverts and defectives, many of them with criminal tendencies, who only need opportunity to develop their very worst traits. Some of these are bright enough mentally to lay their plans with consummate cleverness. They also know that if caught, by a system of writs of error, delays, appeals, etc., it may be possible for them to escape just punishment for their crimes. For example, in 1897 there were about 10,000 murders committed in the United States. Of the murderers apprehended only 147 suffered capital punishment, as specified by law; while 127 were lynched. Certainly not a record to be proud of.

I believe that the time is ripe, that it is no longer a question to be thrust lightly aside, and that the future welfare of humanity demands from our hands, as physicians, along with the exponents of the law, some change in our marriage and criminal laws, as well as our mode of punishment.

That we can expect any reform from our legislators on the subject is simply out of the question; but that by the joint effort of the two learned professions—medicine and the law—it should be possible to change our criminal code.

There cannot be a single valid argument urged against the restriction of marriage between defectives, whether moral or physical, and degenerates, nor the sterilization of the same.

This is especially true of habitual criminals. Crime is usually a disease or the result of diseased conditions, and as such should be recognized and diagnosed.

Every court should have a physician, an expert on defectives, whose duty would be to designate the best means to reform or cure the curable criminals, while the incurable should be put into such a condition and under such restraint as not to harm or degrade society in general.

Environment counts for a great deal. Paradoxical as it may seem, there are many criminals made in jail.

The question asked by Cain, on a memorable occasion, is answered most emphatically in the affirmative as we ascend the scale of civilization and enlightenment,—we cannot escape,—Am I my brother's keeper?

Laying aside all sentiment and maudlin sympathy, and viewing the question with the cold light of science thrown upon it, there can still be but one answer to it. We are responsible for our weaker brothers as well as for generations yet unborn.

Do we realize our responsibility? Do we realize fully that the future of our glorious expanding republic, as well as humanity the world over, demands from our hands, as physicians, a remedy for the evil?

Are we to treat the morally sick as outcasts? When they have bodily ills we nurse them back to health in our hospitals. When they have an outbreak of criminal illness, what do we do to them and with them?

Let me close with a prayer that would be a creditable addition to any prayer-book,—the prayer of Buddha,—"We pray Thee, have mercy on the vicious; Thou hast already been merciful to the righteous by making them so."

Comparative Losses in the Spanish and Civil Wars.

In April, 1861, President Lincoln called for 75,000 volunteers, but it was only after July 22, when his second call for troops was made, that the Federal forces were comparable in numbers with those recently called into existence. From July 22, 1861, until the end of November, less than five months, the medical reports, from regiments aggregating only 69,118 men, recorded a loss of 3075 men from an average strength of 77,690 men, or 17.31 deaths out of every 1000 men during that period, and presumably more deaths occurred than were reported. In April, 1898, President McKinley called for 125,000 men, and later for 75,000, which, with the increase in the regular army, in the immune and other special regiments, made a total of over 270,000 troops. Beginning with May, 1898, and including June, July, August, and September, the medical reports, from regiments aggregating 151,685 men, record a loss of only 1715 men in an average strength of 167,168 men, or 10.21 deaths out of every 1000 men during the five months, as compared with 17.31 deaths out of every 1000 men during the first five months of the Civil War.—*Medical and Surgical Review of Reviews.*

ALUMNI NOTES.

University War Memorial.

Plans are assuming definite shape for the erection of the Memorial Tower at the University of Pennsylvania, as a testimonial to the services of the men connected with the University, as well as of the institution itself, in the Spanish-American war. S. F. Houston, chairman of the committee in charge, is making an effort to have a sufficient sum subscribed so as to permit the laying of the corner-stone of the building during Commencement Week. It is hoped that the building will be ready for occupancy at the opening of the University in September. An encouraging sum has already been subscribed. The tower completed is to cost $60,000.

A complete list of the men connected with the institution at the outbreak of the war, and who lost their lives as a result of services rendered to their country, has been made out. It includes Ensign John Blair Gibbs, M.D., of the Class of '81 (Med.), assistant surgeon of the United States navy, who fell at the battle of Guantanamo, being, it is said, the first American officer killed in Cuba; Major Lawrence Savery Smith, M.D., '88 (Col.) and '91 (Med.), surgeon of the Pennsylvania volunteers, U.S.A., who had charge of the hospital at Porto Rico, and who was an instructor in the Medical Department at the time of his death; Harrison G. Kimball, who served with Battery A; Lieutenant John B. Scott, who was acting chaplain on the St. Paul, and George Elliott, of the Class of '98 (Col.), who served as a private in the First Pennsylvania Volunteers.

The record now in course of preparation shows the University to have been represented in every engagement of the war, notably at Manila, Cardenas, Guantanamo, San Juan, Santiago, and Porto Rico. The service rendered by the Medical Department of the University at every battle was conspicuously valuable. In addition, six thoroughly equipped hospital trains were sent at the expense of the University to bring sick and wounded soldiers to the University Hospital.

The Annual Commencement.

Preliminary arrangements for the celebration of commencement week by the University of Pennsylvania have begun. The an-

nual commencement exercises of the graduating classes of all departments, around which centre all other observances of the week, are to be held at the Academy of Music, Wednesday evening, June 14. The baccalaureate sermon is to be delivered to all students of the University on Sunday, June 11. The Monday following will be class day, and Tuesday alumni day.

The total number of students in all departments who are registered as candidates for degrees this year is 653. Of this number 218 are in the medical school, 164 in the dental, and 115 each in the college and law school, with the remainder scattering. These students represent every State and Territory in the United States and Porto Rico and the following foreign countries: Scotland, Mexico, Brazil, New Brunswick, Canada, Holland, Germany, Nicaragua, England, New Zealand, China, Barbadoes, France, Australia, Ecuador, Switzerland, Austria, and Russia.

During commencement week it is the intention of friends of the University to lay emphasis upon the needs of the institution in the way of endowments. So much energy has lately been given to providing for the acquisition and equipment of much-needed buildings that attention seems to have been withdrawn from other very important wants. The most pressing of these are more and larger endowments of chairs and professorships in various subjects so as to attract to the University a larger number of distinguished men in various lines of work. The importance of this has been shown by the result of the establishing of the John Leib Harrison Foundation in the Department of Philosophy. This result has been such as to attract to the institution from all parts of the country a large number of young men who are preparing themselves for teaching.

A special effort is also to be made then to secure the larger part of the $100,000 necessary to establishing the fund for the sixteen scholarships on "The General Alumni Society Scholarship Foundation."

A Statue of Dr. William Pepper.

At a meeting held in the Mayor's office, on March 17, of the committee to prepare a memorial to the late Dr. William Pepper, it was decided to erect a bronze statue of Dr. Pepper on the City Hall plaza, and the following committees were appointed to carry out the project: Art Committee, Dr. Alfred C. Lambdin, John Wanamaker, Dr. J. M. Da Costa, Alfred Gratz, and Dr. Edward Brooks; Finance Committee, Justus C. Strawbridge, S. R. Shipley, S. B. Huey, John H. Converse, Daniel Baugh, R. Dale Benson, Hampton L. Carson, Dr. H. C. Wood, and John B. Gest.

Dr. John Guiteras's Resignation.

Dr. John Guiteras, whose resignation as professor of Pathology in the University will take effect at the close of the present session, expects to spend a year in Europe in the investigation of tropical diseases, after which he will locate in Havana, and resume the practice of medicine.

Dr. John B. Deaver's Resignation.

At the last meeting of the Trustees of the University the resignation of Dr. John B. Deaver, as assistant professor of Applied Anatomy, was accepted, to take effect at the end of the present academic year.

Dr. Simon Flexner to succeed Dr. John Guiteras.

At a recent meeting of the Trustees of the University, Dr. Simon Flexner, of Johns Hopkins University, was elected to succeed Dr. John Guiteras as professor of Pathology.

Dr. Flexner received his medical degree at the University of Louisville in 1889. He was Fellow in Pathology in Johns Hopkins University, 1891–92; associate in Pathology, 1892–95; associate professor of Pathology, 1895. Subsequently, the chair of Pathological Anatomy was created, and Dr. Flexner was appointed professor,—the position which he now holds. In 1893, he studied in Strassburg and Prague.

Dr. Flexner is widely known throughout this country and Europe as an original investigator,—his most important work having been in the field of experimental pathology. He is one of the most earnest, successful, and popular teachers in the Johns Hopkins University. He enters upon his duties at the University of Pennsylvania on September 1.

Coroner's Physician: Philadelphia.

Dr. Henry W. Cattell has resigned his position as one of the coroner's physicians of Philadelphia to accept the appointment of director of the Ayer Clinical Laboratory in the Pennsylvania Hospital.

Dr. Cattell will be succeeded as coroner's physician by Dr. William Scott Wadsworth, of the Class of '97.

Necrology.

Dr. Lewis Johnstone died on January 31, 1899, in Stellarton, Nova Scotia. Dr. Johnstone was born in Halifax, March 7, 1824, and was graduated from the University of Pennsylvania in 1844. He was the oldest alumnus of the University in the Maritime Provinces.

EDITORIAL.

THE RELATION OF BACTERIA TO CHOLELITHIASIS.

The theory that micro-organisms might play an important *rôle* in the production of cholelithiasis was first suggested by Welch, in 1890, when he called attention to the presence of bacteria in the centre of gall-stones. The chief offenders in this respect appear to be the typhoid bacillus and the colon bacillus. That the typhoid bacillus frequently enters the gall-bladder in the course of typhoid is certain. Flexner found it in 50 per cent. of the cases which came to autopsy. Moreover, instances are not uncommon in which cholecystitis with cholelithiasis has developed shortly after an attack of typhoid fever. Cushing (*Johns Hopkins Hospital Bulletin*, May, 1898) has reported such a case, and has collected four others from literature, in which typhoid bacilli were isolated at the operation. In another case reported by Cushing, in which typhoid bacilli were found in pure culture, there was absolutely no history of a previous attack of typhoid fever. This case suggests the thought that the gall-bladder, like the kidney, lungs, and meninges, at times, may be the point of localization of the typhoid infection.

Some recent investigations tend to show that the bile, like the blood, acquires during convalescence from typhoid fever antitoxic and agglutinative properties, which may cause clumping of the bacilli, and thus form the nuclei of biliary calculi.

To establish with greater certainty the etiological relation of bacteria to cholelithiasis experiments have been undertaken to produce calculi in animals artificially by the aid of bacteria. Mignot (*Archives générale de Médecine*, August, 1898) has succeeded in producing calculi in this way in guinea-pigs, and draws the following conclusions from his experiments: Foreign bodies, when introduced into the gall-bladder, can stay there for an indefinite time, provided they are aseptic, without causing inflammation or precipitating the solids from the bile. Foreign bodies previously impregnated with virulent micro-organisms cause a more or less intense cholecystitis and precipitate the solids from the bile. As long as the bacteria retain their virulence, however, they cannot form a calculus, but only a sediment mixed with pus. This precipitate has no tendency to cohere or to adhere to foreign bodies.

Mignot believes that previous attempts to form calculi have failed because the bacilli were virulent and not attenuated. When the bacilli are sufficiently attenuated by growing them for some months in bile to which constantly decreasing amounts of broth have been added, they are no longer pathogenic when injected into the cellular tissue of animals, but their introduction into the gall-bladder is sometimes followed, unless they are washed out into the intestine, by the formation of calculi. If a porous body like cotton-wool be placed in the bladder and fixed to its wall to prevent expulsion, and then bacteria introduced, a stone is formed with the greatest certainty. According to Mignot five or six months are required for the formation of a perfect calculus. The kind of bacteria injected seems to be of secondary importance, twice the introduction of the staphylococcus, streptococcus, and even the non-pathogenic bacillus subtilis, was followed by the formation of calculi.

One series of experiments undertaken in this country has confirmed, at least in part, Mignot's conclusions. For this purpose Richardson (*Journal of the Boston Society of the Medical Sciences*, January, 1899) took three rabbits. Into No. 1, after laparotomy, there was injected into the gall-bladder one-half cubic centimetre of a typhoid bouillon culture, which had been clumped by the addition of serum from a typhoid patient. Into the gall-bladder of rabbit No. 2 two drops of an ordinary bouillon culture were injected. Rabbit No. 3 was used as a control animal. About four months later all three rabbits died. Autopsy showed in the gall-bladder of the control rabbit a number of small rounded bodies the size of a pin's head. These crushed readily under cover-glass, and then showed arrangement of their substance in concentric rings. The gall-bladder of the rabbit which had received the plain bouillon culture showed nothing unusual. In the case of Rabbit No. 1, however, where the clumped culture was introduced, the gall-bladder was contracted about a rounded body, firm in consistency, brown in color, and about the size of a pea-bean.

The results of these experiments, together with the clinical and pathological observations, to which reference has been made, furnish strong support to the theory that biliary calculi have their origin in a reaction between the bile and invading micro-organisms, and justify the conclusions thus formulated by Cushing: (1) The bacilli, during the course of typhoidal infection, quite constantly invade the gall-bladder; (2) the organisms retain their vitality in this habitat for a long period; (3) in the course of time the bacilli are almost invariably found to be clumped in the bile, suggesting the occurrence of an intravesical agglutinative reaction; (4) these clumps presumably represent nuclei for the deposit of biliary salts, as micro-organisms may with

regularity be demonstrated in the centres of recently formed stones; (5) gall-stones being present in connection with the latent, long-lived infective agents, an inflammatory action of varying intensity may be provoked at any subsequent period.

IS AMYOTROPHIC LATERAL SCLEROSIS A PATHOLOGICAL ENTITY?

A DISEASE characterized by progressive wasting of the muscles was first described by Duchenne, and a little later by Aran, in 1849 and 1850. Cruveilhier (1855) recognized it as a spinal disease, Lockhart Clarke (1873) restricted it to the anterior horns of gray matter, and Charcot (1875) finally pointed out that it was dependent upon degeneration of the ganglion-cells of the anterior horns. Charcot subsequently described an affection in which the degenerative process not only involved the anterior horns but also the pyramidal tracts, and which was characterized by atrophy of the muscles, paralysis, spastic contractions, and exaggerated reflexes. This latter disease was termed amyotrophic lateral sclerosis, or Charcot's disease, and the former progressive muscular atrophy, or Duchenne-Aran's disease. It was Charcot's belief that the primary lesion in amyotrophic lateral sclerosis was in the pyramidal tracts, and that the degeneration of the anterior horns was secondary. This view of the affection, however, has never gone unchallenged. Leyden particularly opposed it, since he had found the same anatomical findings in a case of progressive bulbar paralysis. Gowers contends the conditions described by Charcot and by Duchenne and Aran are identical, and states that he has never seen a case in which lesions in both gray and white matter could not be detected. Senator has also cited a case which combats Charcot's view, and suggests the cumbersome appellation bulbo-spinal spastic atrophic paralysis instead of amyotrophic lateral sclerosis. Raymond, likewise, admits that in the majority of cases amyotrophic lateral sclerosis cannot be separated from progressive bulbar paralysis.

It is as difficult to identify amyotrophic lateral sclerosis clinically as it is pathologically, since spastic contractions occur in relatively few of the cases in which the typical lesions of amyotrophic lateral sclerosis are found after death.

The pathological evidences which can be adduced to support the recognition of the syndrome known as primary lateral sclerosis or primary spastic paralysis as a distinct affection of the spinal cord is

even more flimsy than that which is offered in combating the identity of amyotrophic lateral sclerosis and pure progressive muscular atrophy.

We believe that there has been only one case reported, that of Déjerine and Sottas, in which the sclerotic process has been confined to the crossed pyramidal tracts of the cord, and has not invaded the brain nor the anterior horns.

The whole trend of modern research indicates that, in the majority of instances, the sclerotic lesions of the brain and cord are not systemic, but that the same noxious agent may attack different parts, often widely separated, either simultaneously or successively, and that the variation in the results is dependent upon the severity with which the various parts are attacked, or the order in which they are invaded.

Under the circumstances it seems perfectly justifiable to regard lateral sclerosis, amyotrophic lateral sclerosis, progressive bulbar paralysis, and progressive muscular atrophy as different expressions of the same morbid process,—a degeneration of the motor path, which may involve, simultaneously or successively, both the upper and lower neurons.

Mills (*Journal of Nervous and Mental Diseases*, February, 1899) expresses the opinion that there are three distinct types of the disease. In one type the symptoms of so-called primary lateral sclerosis develop early, and contractures and bulbar symptoms later; in the second type muscular atrophy in the limbs is contemporaneous with the beginning of the spastic condition, and in the third type special bulbar symptoms develop very early.

For the Treatment of Chronic Morphinism.

Hirt recommends first of all total abstinence from morphine. The first three days are the most difficult for the patient to overcome; but once passed there is hope for recovery. During these three days chloral (forty-five grains) or trional must be administered to combat the insomnia consequent upon the withdrawal of the drug. If the sleep is restless, patient is given a warm bath of thirty minutes' duration, followed by a cold douche. On the fourth day begins the treatment by suggestive therapeutics carefully conducted, at first suggesting general harm from morphine, and eventually creating in the patient a feeling of horror and repugnance towards the poison. Out of thirty-five patients treated in this manner, twenty-seven were entirely cured, two committed suicide during the first three "terrible" days, the rest were lost track of or relapsed.—*Boston Medical and Surgical Journal.*

MEDICAL PROGRESS.

MEDICINE.

UNDER THE CHARGE OF

JAMES TYSON, M.D.,

ASSISTED BY

M. HOWARD FUSSELL, M.D., AND A. O. J. KELLY, M.D.

Duodenal Ulcer.

Burwinkel (*Deutsche medicinische Wochenschrift*, December 29, 1898) observes that ulcer of the duodenum is rare when compared with gastric ulcer. The ulcer is mostly single, but sometimes multiple, and even associated with gastric ulcer. Five cases are reported, all of which recovered. Attention is directed to the following points in diagnosis: (1) Melena, hemorrhage from intestinal ulcerations, whether tuberculous or malignant, could be excluded in these cases. (2) The site of the pain, which corresponded to the anatomical situation of the duodenum; this pain did not appear until two or three hours after food; it was sometimes slight and sometimes very severe. (3) Previous dyspeptic symptoms, which appeared periodically and were marked; the patient's general condition was occasionally considerably disturbed. (4) The age and sex of the patient. In cases of duodenal ulcer the patients are nearly always men, and the average age is over 40. In Burwinkel's cases all were men, the eldest being 60, and the youngest 33. The prognosis of duodenal ulcer is serious, so far as our present knowledge is concerned; it ends more frequently in death than does gastric ulcer. Two forms must be recognized, —namely, the rapidly fatal and the chronic ulcer. The perforating ulcer gives rise to peritonitis, and only occasionally to a localized abscess. Erosion of a large-sized vessel by the ulcer is equally unfavorable. Stenosis of the duodenum has been known to follow. Relapses are frequent. The treatment is the same as that of gastric ulcer.

Ocular Evidence of Hysteria.

Casey Wood (*American Journal of the Medical Sciences*, January, 1899) draws the following conclusions from a study of this subject:

(1) Most cases of hysteria present well-marked, easily detected eye-signs and symptoms.

(2) A few ocular symptoms, such as a reversal of the relation of the color-fields and the field for white, the tonic form of blepharospasm, spasm of accommodation and convergence, and pseudoparalytic ptosis, may be regarded as pathognomonic of hysteria.

(3) Defects of vision (in the absence of refractive errors, accommodative

anomalies, and fundus lesions) are, generally speaking, hysterical, if accompanied by photophobia and any form of blepharospasm.

(4) No examination of a patient for hysteria should be regarded as complete without considering the condition of his ocular apparatus.

(5) Where there is no conclusive external evidence of the neurosis present the perimeter should be carefully used, the range of accommodation should be noted, and the ophthalmoscope employed.

(6) It should always be remembered that ocular hysteria is common in children and men.

(7) Organic disease (traumatism especially) of the eye may accompany purely functional disturbances of that organ.

Traumatic Rupture of the Heart.

Newton (*Medical Record*, January 21, 1899) was summoned to see a healthy man, aged 28 years, who, while riding rapidly, was thrown to the ground by a break in the head of the bicycle. He apparently clung to the handles and struck his chest with great force against a portion of the tubing attached to them. He staggered a few feet and then fell. He died in about ninety minutes. The skin was not broken, but showed the imprint of the broken end of the tube. The sixth costal cartilage was broken, and its outer fragment had been driven against the heart with sufficient force to make a triangular tear in the right ventricle near the apex. The pericardium was not ruptured. In the forty odd cases of traumatic rupture of the heart which have been reported, in almost every instance there has been disease of the heart. In such cases the force necessary to rupture the organ is very slight.

Combined Typhoid and Malarial Infection.

Lyon (*American Journal of the Medical Sciences*, January, 1899) reports a case of combined typhoid and malarial infection, and, from a review of the literature, concludes as follows: In regard to the relative frequency of occurrence of the combined typhoid and malarial infection, what are we to infer from our study? Do we agree with the conclusions of Rho, who says, "The term typho-malarial fever has caused much uncertainty in medicine and much error in diagnosis; so far as relates to the contemporaneous infection of malaria and typhoid, the matter reduces itself to a rare coincidence, to a simple complication, which does not merit a special name."

The statistics show evidence that, on the whole, this conclusion is rather too sweeping, but would apply with considerable degree of accuracy to temperate climates, where malarial fever is endemic and typhoid fever prevalent; it seems entirely probable that cases of combined infection are comparatively common. This view is supported by Vincent's seventeen cases from Madagascar and Algeria, Laveran's two cases from Algeria, Kinyoun's five cases, coming from our Southern States, and by many other observations made in southern countries. The mere mechanical theory of chance would also support this view. It is probable that cases of true combined malarial and typhoid infection are not uncommon in our Southern States, but such cases are certainly not the cases that have been described from the South under the name "typho-malarial fever." It is to be sincerely regretted that this misnomer has become so general, involving, as it does, an error of diagnosis, and sometimes

useless and even vicious therapeutic measures. There is no excuse for preserving the term, and we may hope that the near future will find it thoroughly eliminated from use.

[In 23.8 per cent. of the 147 soldiers with typhoid fever, who were treated at the German Hospital, Philadelphia, the malarial parasite was found in the blood. In several of these cases chills developed during convalescence. Eighty-nine and eight-tenths per cent. of these men came from Camp Meade and Chickamauga. In 112 cases of typhoid fever among soldiers, treated at the University Hospital, the malarial organism was found in three. In 214 typhoid patients, treated at the Pennsylvania Hospital, the malarial organism was found in two.]

Clot on Aortic Valve causes Misleading Physical Signs.

Brooks (*Medical Record*, February 25, 1899), at a recent meeting of the New York Pathological Society, presented specimens from a woman who gave a previous history of cardiac trouble following an attack of gout, several years previously. The apex-beat of the heart was in the fifth space; there were a diffused systolic murmur at the apex and a thrill, evident on palpation, in the same area. There was a double systolic murmur at the apex, transmitted to the left, and a double murmur was audible over the aortic valve. The pulsations of the vessels in the neck and in the episternal notch were marked. Three eminent clinicians who saw the case diagnosticated aneurism of the transverse arch. At the autopsy the arch of the aorta was found not dilated at all, but the aortic segments were the seat of an acute ulcerative process. Attached to the flaps was a very dense clot, which extended up in the arch as far over as the subclavian on the other side. It was very intimately adherent to the segment of the valve and had become, near its base, in part calcareous. It was evidently a preformed clot. It was probable that the thrill had been caused by this clot vibrating in the stream of blood. The other symptoms were accounted for by the state of the mitral and aortic valves. On looking over the literature, Dr. Brooks said that he had found an account of several cases in which thrombi in the aorta had given rise to thrills and auscultation-sounds closely simulating those heard in cases of aneurism.

The Pulse and the Blood-Pressure.

Dr. George Oliver (*Clinical Journal*, February 1, 1899) thus epitomizes the leading signs of increased and diminished arterial blood-pressure. In increased arterial pressure (1) the artery is felt to be full, and can often be rolled under the finger. (2) The ictus or beat of the pulse is prolonged, a quality which is not recognized under a light touch, the swell and duration of the pulsation increasing with the compression. (3) The pulse is only obliterated under increased pressure, the finger, however, very frequently failing to recognize this fact when the calibre of the radial artery is reduced. (4) The hemodynamometer amplifies all these tactile signs of the pulse, and defines the blood-pressure with certainty and accuracy. (5) The blood-pressure, arterial and venous, is frequently uniform, or alters but little on changes of posture, and the radial pulse is well sustained when the wrist is elevated above the head (the gravity test). (6) The venous blood-pressure may be normal, or may be increased when the peripheral resistance is compensated; or it may be sub-

normal, or even so low as to be immeasurable when the peripheral resistance is so excessive as to reduce the high arterial pressure to a minimum or to zero in the veins. (7) The second aortic sound is generally accentuated. (8) The apex-beat is frequently moved to the left of its normal position. (9) The breathing is easily disturbed by slight exertion.

In diminished arterial pressure we have the following signs: (1) The artery is flaccid and cannot be felt. (2) The beat of the pulse is short and full, a quality easily recognized under the lightest touch,—that is to say, with little more than the mere weight of the finger upon the artery. (3) The pulsation is obliterated under slight compression. (4) On applying the hemodynamometer the index begins to pulsate under a low pressure, and soon attains its maximum excursion. (5) The blood-pressure, arterial and venous, always varies considerably with changes of posture, generally falling with recumbency, but sometimes rising for a time with the assumption of that posture when the arterial tonus is greatly reduced and the radial pulse is greatly lessened, or may even vanish when the wrist is raised above the head. (6) The venous pressure is generally normal, or may be in excess of normal, but is sometimes reduced from diminished *vis a tergo*, and not from obstruction of the peripheral vessels.

Intestinal Myasis.

Malfi (*Riforma Medica*, July 22, 1898; *British Medical Journal*, October 8, 1898) reports the case of a woman who complained of passing *per anum* what she called worms, which proved to be the larvæ of musca carnaria. The condition had lasted for four years, and only occurred during the summer. None were ever passed by the nose or mouth. Similar cases have been recorded of this accidental parasitism, and Joseph gave the name "myasis" to the group. Several of the cases hitherto recorded were marked by more or less severe symptoms, but in the author's case there was no vomiting, no thirst, regular action of the bowels, good appetite, and no abdominal pains. During the winter months no larvæ could be detected in the feces. Probably they were ingested as eggs and not as larvæ; and it is known that many of the diptera deposit their eggs on food.

The Thyroid Treatment of Diabetes.

William Murrell (*Medical Press and Circular*, December 14, 1898) reports the following case of diabetes in which thyroid extract was used with advantage: A woman, aged 28 years, had diabetes mellitus. On an ordinary diet she passed on an average 112 ounces of urine in the twenty-four hours, of a specific gravity of 1046, containing 5848 grains of sugar. Fresh sheep's thyroid was given in four-grain pill every four hours. After the third dose there was headache, general aching, and a temperature of 100.4° F., and the treatment had to be suspended. After a few days two grains were given every three hours; tolerance was established; twelve grains were given every three hours during three weeks. The influence of the thyroid treatment was marked. During the first fifteen days the daily average excretion of sugar was 3057 grains, the next eleven days 1346 grains, and on the last days 1180 grains. The thyroid treatment was suspended, and the patient was placed on the restricted diet. Three thousand four hundred and forty grains were passed on last day,

2260 more than on thyroid treatment. Under the thyroid treatment the average quantity of urine was eighty-five ounces. On the restricted diet 129 ounces. The influence on the body weight was equally well marked; on thyroid it fell from six stones nine pounds to five stones twelve pounds, and then to five stones four pounds. The lowest weight was four stones thirteen pounds; when thyroid was suspended it rose to five stones three pounds. The general condition markedly improved on the thyroid treatment. The patient continued taking the pills, and remained well and strong. When she discontinued, the thirst returned and the urine rose from five to seven pints daily.

It was obvious that the effect of thyroid feeding was transitory and that the administration should be maintained just as in myxedema.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

ASSISTED BY

CHARLES H. FRAZIER, M.D., AND GEORGE M. PURVES, M.D.

Tuberculosis of the Mammary Gland.

Halsted and Le Count (*Annals of Surgery*, December, 1898) report a case of mammary tuberculosis, and review the literature of the subject down to 1898. Tuberculosis of the breast appears in one of two forms: the disseminated, nodular or discrete, and the confluent form. The most characteristic features of the disseminated nodular form of the disease are the extreme chronicity of the process, and its painless and insidious development, whilst the confluent form is marked by a more acute onset, greater pain, and rapid enlargement of the breast. This latter type of the disease is more common than the disseminated nodular form. In about 75 per cent. of the cases it is associated with tuberculous enlargement of the corresponding axillary glands. In many instances the mammary disease was regarded as secondary to the gland affection, but the authors hold that the primary focus in the breast often escapes notice until after the axillary glands have become considerably involved. As in other forms of tuberculosis, softening and suppuration with the formation of fistulæ is the natural and frequent termination of both types of this mammary disease. Spontaneous healing of tuberculosis foci in the gland before suppuration takes place seldom, if ever, occurs; and after the cavities have discharged their contents, it is only in exceptional cases that healing follows. The diagnosis of mammary tuberculosis is usually difficult, except in cases in which the disease in the breast is far advanced, or in those in which other organs of the body are the seat of tuberculous disease. In all cases, it is pointed out, a microscopic examination should be made, and the diagnosis based only on the minute structure of the growth or upon the presence of tubercle bacilli. In disseminated nodular or confluent tuberculosis, early removal of the breast and corresponding axillary glands offers the greatest hope

for a speedy and permanent cure. Nothing short of this can assure an eradication of the disease, and the prognosis of such treatment, when the mammary disease is primary, the authors regard as excellent. In secondary tuberculosis of the gland the prognosis, of course, depends upon the seat and extent of the primary lesion. In the discrete nodular form, where the disease is limited to a single focus, the remaining portion of the gland being apparently normal, the removal of the nodule with the adjacent gland tissue will be sufficient, provided the patient can be kept under observation for some time after the operation.

Schlatter's Case of Removal of the Stomach.

Schlatter (*Lancet*, November, 1898) communicates his further observations on his case of complete removal of the stomach. The patient's weight has increased eighteen pounds and a half since the operation. Her general condition is excellent, and she is able to partake of ordinary diet without any inconvenience other than a feeling of pressure in the epigastrium and in both hypochondriac regions after a hearty meal. A quantity of milk, amounting to ten and a half fluidounces, is quite capable of producing this feeling of pressure. Her digestive capacity can be judged from the following diet lists: January 17: Milk, thirty-three fluidounces; coffee, thirteen fluidounces; three rolls; three eggs; soups, three and a half fluidounces; fried sausage, four ounces; stewed apples, seven ounces; whortleberries, three ounces, and claret, seven fluidounces. February 5: Milk: eleven and a half fluidounces; three rolls; three eggs; soup, four fluidounces; sweetbreads, ten and a half ounces; cauliflower, seven ounces, and claret, seven fluidounces. March 4: Milk, ten and a half fluidounces; coffee, seven fluidounces; soup, four fluidounces; roast veal, four ounces; carrots, fourteen ounces; four rolls, and claret, seven fluidounces. Her animal food varied between roast veal, Vienna steak, chops or cutlets, beefsteak, fried sausage, brain, sweetbread, and fowl. Analyses of urine and feces showed a diminution of chlorides and nitrogen, indicating an abundant absorption of albumin. Microscopical examination of the feces revealed an entirely normal condition. There were no putrefactive changes present, proving that the entire absence of the gastric juice, with its hydrochloric acid, is without any influence on the extent to which putrefactive decomposition is developed in the intestine.

The Nature of Erysipelas.

Hutchinson (*Medical and Surgical Review of Reviews*, January, 1899) states that there are many details respecting the nature of erysipelas which are but illy understood. Though undoubtedly contagious, it is probable, from clinical evidence, that a great number of cases originate without any introduction of contagious matter from without, it is probable that the micrococcus, having once gained access to the cutaneous tissues, never afterwards leave them, and may remain there completely latent for indefinite periods, ready at any time, on provocation, to manifest its activity. Also, it is probable that the micrococcus often exhibits its powers not alone, but in association with other microbes, or in a sort of partnership with the proclivities of the patient's cells. There is no one malady which, in reference to the total of its clinical symptoms, can claim the name erysipelas exclusively. We know well what we

mean by the word when applied to typical forms, of which there are two or three at least; but there are a number of others which, whilst standing in close relationship, are not typical. In recognition of this, he prefers to speak of "erysipelatous inflammations" rather than "erysipelas." From the clinical stand-point, an inflammatory process is "erysipelatous" whenever the lymphatic spaces are involved in a rapidly spreading inflammation, which produces edema, advances by a congested border, and quickly subsides in the part first attacked. Edema vesications and a spreading edge are the features which characterize it. His suggestion does not conflict with the generally accepted doctrine of a specific microbe. But he does not regard the physical demonstration of this as materially helping the problems of the clinician, who has still to ascertain the conditions which limit and modify the activity of these germs, and the special character of the very varying symptoms.

The characteristics of erysipelatous inflammation are by no means always present together. In rare cases the florid congestion may be wholly absent. He has seen edema without any trace of congestion spread from an operation wound, and run almost over the whole cutaneous surface, followed by speedy subsidence and subsequent desquamation. In every feature these cases simulated typical erysipelas, except in the dilatation of blood-vessels. He has long recognized these forms under the name "white erysipelas." There is also another form, in which blood-staining rather than congestion takes place, and the erysipelatous area is brown. It is not at all infrequent to witness erysipelatous dermatitis without vesications. The abruptly-defined border, a most valuable character in diagnosis, must not be overrated. It may be but slightly marked, or it may be present at one part of the edge and absent at others. Edema is absolutely essential, but it may vary much in amount and character. One attack of erysipelas does not prevent others; on the contrary, it predisposes.

The Treatment of Pott's Disease.

Galloway (*Canadian Journal of Medicine and Surgery*, February), in a paper entitled "Should the Deformity in Pott's Disease be Forcibly Corrected?" sums up his conclusions as follows:

"(1) Sufficient experience with the operation of forcible reduction of the deformity in Pott's disease has been accumulated to enable each surgeon to decide whether the procedure is or is not at present justifiable. (2) The theoretical dangers of the operation have not received much support in practice, enough, however, to demand that they be taken into account. (3) Calot reports better results, and appears to be more hopeful than any one else. (4) We should be justified in performing the operation if we could be sure of ultimate good recovery without deformity or with greatly diminished deformity. (5) Satisfactory evidence that the ultimate result will be good is wanting, while the post-mortem findings quoted are anything but reassuring. (6) Our knowledge of the behavior of tuberculous bone does not make us hopeful regarding the filling in of the gap created by the operation, and the admitted tendency of the deformity to relapse after correction increases doubt on this point. (7) Surgeons should cease performing the operation, and wait patiently until the ultimate results in a considerable number of the cases already treated have been determined; not condemning the operation in the mean time, but simply holding it *sub judice*. (8) As an exception to the conclusion just stated, cases

complicated by paralysis, which cannot be cured by other means, should, in the absence of contraindications, be submitted to forcible reduction, as there is abundant evidence to show that the operation usually cures or improves the paralysis promptly. Very early cases with slight deformity may perhaps also be attempted. (9) The tendency to simplification of the original operation shows distrust for Calot's method, or points to its being unnecessarily radical. The method described by Goldthwait is simpler and more reasonable. (10) As a result of the world-wide discussion of this subject some advance in the treatment of Pott's disease may be anticipated."

The Operative Treatment of Pulmonary Cavities.

Wiener (*Münchener medicinische Wochenschrift*, October 18, 1898) describes a case of gangrene of the left lower lobe, which he treated by pneumotomy. He turned back a flap of skin and muscles eight inches long, and after resecting ribs rather freely, came upon the pleura. As the parietal and visceral layers were adherent he was able to proceed to the pneumotomy proper at once. With the knife of a Paquelin cautery he penetrated the lung for about two inches, when the cavity was opened. It was found to contain a large slough of pulmonary tissue as big as a fist; this was removed and the cavity packed with iodoform gauze. Five days later another cavity was found, which communicated with the first by a narrow opening, and resembled it in also containing a large slough. This was treated in the same way. The quantity of expectoration at once diminished, and became simply purulent instead of fetid. Six weeks later the cavity had completely closed. There was not even a sinus left, and the patient went out of hospital having gained over thirty pounds in weight. The writer considers that such cavities should be opened freely.

Tendon Transplantation.

Rocket (*Lyon Médical*, No. 34, 1898) reports tendon transplantation in the paralyzed muscles of the hand. The abductors of the hand and thumb in a child of nine were paralyzed. The hand was held turned towards the side of the ulna. An incision was made along the ulnar side of the forearm, extending slightly beyond the wrist-joint; the tendons of the flexor and extensor carpi ulnaris were cut close to their insertions; the tendons of the extensor brevis and abductor longus pollicis were laid bare, the sheath opened, and the divided tendon of the extensor carpi ulnaris inserted into both, and the hand held in a position of radial abduction. Four months later the patient was able to abduct the hand and thumb.

In a second case, that of a child of thirteen, with paralysis of the extensors of the hand and abductor longus pollicis, the peripheral ends of the extensor longus pollicis were seen to the tendon of the extensor indicis proprius with the resulting ability to stretch the forefinger and thumb. In a 14-year-old boy with a paralyzed arm and flail wrist-joint, with only the power of flexion of two fingers and extensor of the ring-finger and thumb, left tendon transferrence as follows was performed through a median incision,—namely, (1) extensor brevis and abductor longus pollicis; (2) extensor pollicis longus and extensor indicis; (3) the tendons of the middle and little fingers to the ring-finger. Three months later the fore and little fingers could be extended and the thumb could be separated from the second metacarpal.

A similar operation was successfully performed on an individual, 15 years of age, with a spastic hemiplegia of the whole right side, with distortion of the hand, which was held flexed. Incisions were made on the dorsal and volar end of the forearm and wrist-joint, and the extensors of the fingers and extensores carpi were divided a short distance above the joint. The superficial flexors of the finger with the flexores carpi were divided and passed through an interosseous space and united to the central ends of the divided flexors. Five months later the hand was held straight and the fingers (whose deep flexors had not been distorted) could be both flexed and extended.

THERAPEUTICS.

UNDER THE CHARGE OF

HORATIO C. WOOD, M.D., LL.D.,

AND

ARTHUR A. STEVENS, M D.

Treatment of Tuberculous Cystitis in Children.

Cumston (*Boston Medical and Surgical Journal*, December 22, 1898) gives the following outline of treatment: Cod-liver oil, creosote, and tonics are of value, and iodoform in the form of a pill is highly recommended by Guyon and Reverdin. Locally an iodoform or guaiacol emulsion is to be injected into the bladder and retained until expelled. The ulcerations may be cauterized and curetted, if they be extensive. Being aware of the favorable results obtained from local applications of lactic acid in tuberculous laryngitis, the author was led to try this agent in the bladder, and the results obtained in the case subjected to this treatment, warrant the further trial of the drug.

When suprapubic cystotomy is performed to bring about a radical cure, it should be done only in primary vesical tuberculosis, and then much can be expected from drainage of the bladder. The ulcerations can be directly cauterized with the thermo-cautery, or when excised through the opening. When cystotomy is done as a palliative measure the relief from pain is quite enough to justify its performance.

Nirvanin.

Tuschenburger (*Münchener medicinische Wochenschrift*, No. 2, 1899) describes a new local anesthetic, to which the name nirvanin has been given. It is said to be only one-tenth as poisonous as cocaine. It is slightly antiseptic, so that solutions even of the strength of one-half per cent. will remain sterile. The author tabulates ninety-four operations performed under the effect of nirvanin. No unpleasant symptoms appeared in any of the cases. The best method of employing the drug is to make a 2-per-cent. solution with sterilized saline fluid.

Suprarenal Gland Extract as a Hemostatic.

Lermitte (*British Medical Journal*, February 25, 1899) reports the case of a boy, aged 6 years, who had a severe attack of diphtheria in 1894, and who had had since convalescence repeated attacks of epistaxis. These had persisted in spite of every form of treatment adopted. These attacks averaged three or four a week. Examination revealed only a dilated and angeiomatous condition of the vessels. The treatment consisted in the insertion of a pledget of cotton-wool soaked in a 5-per-cent. solution of cocaine into each nostril, and leaving them *in situ* for five minutes. On withdrawing these similar pledgets, soaked in a saturated solution of boric acid, containing five grains of dried extract of suprarenal gland to the ounce, were inserted, and left in for the same length of time. These applications were made on alternate days for three weeks, then every third for three weeks, and, finally, every fourth day for three weeks, making in all twenty-four applications. There was no return of the bleeding after the first application. The condition was not associated with the hemorrhagic diathesis, as a subsequent operation for the removal of enlarged cervical glands caused only moderate hemorrhage. The author concludes that in suprarenal extract we possess a very powerful hemostatic, whose use, unlike some others, is attended by no unpleasant effects, either at the time of its application or subsequently.

Dionin.

Korte (*Therapeutische Monatsblätter*, January, 1899) gives the results of some clinical experiments of a new morphine derivative known as dionin. This preparation is the hydrochlorate of ethyl morphine, and appears in the form of white crystals, of a bitter taste, and readily soluble in water and alcohol. The remedy has been especially useful in asthma and in the irritable cough of bronchitis and phthisis. In the last disease, a dose at bedtime gives great relief, and generally secures a good night's rest. Dionin is in many ways preferable to morphine. It does not disturb digestion nor cause headache. As a narcotic it stands midway in efficiency between morphine and codeine. For the relief of pain it is not so useful as morphine. In phthisis it is said to loosen the cough and diminish the night-sweats. The following formula is recommended: Dionin, eight grains; syrup, three and a half ounces. A teaspoonful at bedtime.

An Emulsion of Mixed Fats.

Russell (*Post-Graduate*, December, 1898) tested emulsions of eleven different fats in order to ascertain whether they would increase the weight of a patient taking them, and whether they would allay cough. Some of them he found to be deficient in both particulars, some of them to be variable, in which class was cod-liver oil, and some of them constantly fulfilled both requirements. The best ones were beef-fat, olive, cocoanut, and peanut oil. These were tried further, and it was found that each lost its effect after a little, so that by alternating from one to the other more good could be derived. So, in order to give the system the advantage of a variety of these four fats, they were mixed together in an emulsion to which a little clove oil was added. This emulsion he considers far superior to an emulsion of cod-liver oil, and has found by trial that it is well borne in febrile conditions.

Application of Picric Acid in Burns.

Dakhyle (*Le Progrès Médical*, January 7, 1899) believes that the best topical application to hasten cicatrization in burns is picric acid. It has no toxic effects upon children and is inoffensive to adults. Its application is recommended from superficial burns to those of the third degree. It is contraindicated in deep, old, or suppurating burns, and in very young children. The technique which should be followed closely consists of antiseptic cleansing of the burn in a picric-acid bath of 1 per cent., with a careful preservation of the epidermis. This washing is to be repeated, taking all possible care to prevent raising the epidermis. When burns are very superficial, remarkable cures have been effected by painting with ether or alcohol saturated with picric acid. In old or suppurating burns one can use picric acid and iodoform, thyol, and ichthyol.

Orthoform and New Orthoform.

Klaussner (*Münchener medicinische Wochenschrift*, October 18, 1898) draws attention to a new modification of orthoform ("orthoform neu") introduced by Einhorn and Heinz. The new orthoform has the same action as the original, but presents the following advantages over it: (1) The powder is more homogeneous, whiter in color, and does not cohere into lumps to such an extent. (2) It is considerably cheaper, and since its action is manifested in a 10- to 20-per-cent. mixture with starch or other powder, its price is no longer prohibitive.

Orthoform, though introduced so recently as August, 1897, has proved serviceable in a great variety of painful affections, both external and internal, through the local anesthesia, which it produces whenever the nerve-endings are exposed. Neumayer and others have found that, insufflated in tuberculous laryngitis, accompanied by severe pain, it causes anesthesia for eighteen to thirty-six hours, allowing solid food to be taken with comfort, and thus improving the general health. Other clinicians have employed it in painful gastric affections in doses of fifteen grains, and have found that, while it relieves the pain of gastric ulcer, simple or malignant, with certainty for some hours, it has no action if there is no solution of continuity. On this account it is a very valuable aid to diagnosis in these cases. Good results have been obtained in skin affections, such as prurigo or herpes zoster. A 5-per-cent. ointment relieves the pain of corneal ulcer. It has also been reported on very favorably by dentists, as relieving the pain accompanying exposed pulp or excavation of carious teeth, and by gynecologists as a local anesthetic for curetting or plugging the uterus. Surgeons have praised it as an application to anal fissure, malignant ulcers, and bed-sores. Hirschbruch uses it in a 3-per-cent. emulsion instead of cocaine for infiltration anesthesia, and Löb adds it to injections of mercury in syphilis. Orthoform has the great advantage over cocaine of being absolutely non-poisonous.

The Mode of Action of the Principal Physical and Medical Agents used in the Treatment of Diabetes Mellitus.

Dr. R. Lepine (*Wiener medizinische Blätter*, January 26, 1899) is credited with the following statements: On the assumption that the cause of diabetes

is a deficiency in oxidation and only in certain cases an increase in sugar-production, Lepine divides the substances into those (1) which increase glycolysis; (2) which diminish the production of glycogen; (3) which possess a sort of mixed or unknown effect. (1) Inhalations of oxygen and compressed air have but little effect on diabetes; permanganate of potassium was not followed by any particular benefit. The alkaline waters, when given in large quantities, are useful, probably only on account of the bicarbonate which they contain. Good results are reported from the use of beer-yeast, especially the soluble ferment. Muscular exercise to moderation is strongly recommended; the results of electrotherapy and organotherapy (thyroidin) are less satisfactory. (2) Antipyrin is especially recommended in nervous cases of diabetes; quinine and salol are also worthy of praise; the first two substances as well as the sovereign remedy, opium, produce their effects through a diminution of the glycogen-production or the sugar-production from the glycogen, or both. The sambul preparations occasionally produce good results. (3) Bicarbonate of soda owes its good effects very likely to a diminution of the sugar-production. Piperazin and arsenic (in large doses) produce a diminution of glycogen. Recently uranium nitrate (0.03–1.02 daily) has been advocated, especially in nervous diabetes. The good results of other remedies (phosphorus, strychnine, iron, pilocarpine, iodine, iodoform, ergotin, calcium) are merely incidental. Brilliant results have been reported after the use of raw or cooked sheep pancreas and also after enemata of pancreatic juice.

OBSTETRICS.

UNDER THE CHARGE OF

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ASSISTED BY

W. A. NEWMAN DORLAND, M.D.

Relationship between the Thyreoid Gland and Female Genitals.

Freund (*Centralblatt für Gynäkologie*, August 13, 1898) reaffirms his views, which have been called into question, as follows:

He has carefully studied for a long period the relationship of the thyreoid to pregnancy, birth, and the puerperal state:

(1) Swelling of the thyreoid, merely from congestion, is always present in pregnancy, and also during menstruation.

(2) Whenever there is energetic or persistent irritation, involving the uterine muscles, it will cause a persistent and permanent swelling of the thyreoid. Under the same conditions colostrum is always to be found in the breast.

(3) Ovarian tumors, tubal dropsy, and the like, never lead to enlargement of the thyreoid, except when, as in rare instances, they encroach upon and irritate the uterine muscle.

The Function of the Corpus Luteum.

J. G. Clark (*Johns Hopkins Hospital Reports*, Vol. vii, No. 4) has made an exhaustive study of the ovarian circulation and the corpus luteum. The theory commonly advanced is that the corpus luteum, by its rapid growth, fills out the empty follicle, and thus restores the equilibrium of the circulation and the lost tension in the ovary through which the rupture of the mature follicle is induced. Clark concludes that its office is chiefly that of a preserver of the circulation, through which the ovum-bearing function is maintained throughout the years of the woman's best physical development. He has summarized his work as follows:

(1) The luteum cells are specialized connective-tissue cells, which appear in the inner layers of the follicle wall, at the time when it begins to show a differentiation into the theca interna and externa, and gradually increase in size and number until the period of maturity, when they have assumed all of the characteristics which cause them to be designated lutein cells. The corpus luteum is, therefore, not an epithelial but a connective-tissue structure.

(2) In the growing follicle the lutein cells are increased at the expense of the ordinary connective-tissue cells until the latter are represented by only a few cells and a fine reticulum in the mature follicle. This reticulum forms a fine web, stretching from the theca externa among the lutein cells, beyond which it is woven into a more or less fine line known as the membrana propria.

(3) At the time of the rupture of the follicle the membrana propria is broken through in places by the advancing lutein cells and blood-vessels, but quickly reforms a connective-tissue line in front of the lutein cells, which push it towards the centre, where it finally forms a dense core of interlacing fibres.

(4) After the rupture of the follicle the lutein cells (connective-tissue cells) show a remarkable activity in growth, increasing both in size and number, until the empty cavity is completely filled in, after which they begin to undergo degeneration.

(5) The fine reticulum between the lutein cells of the mature follicle is the antecedent of the connective-tissue cells, which are quite sparse in the first stage of the growth of the corpus luteum, but become the predominating structure at the height of its development.

(6) The degeneration of the lutein cells is probably induced through the increasing density of the connective tissue surrounding them.

(7) The retrogression of the corpus luteum is characterized, first, by the fatty degeneration of the lutein cells, followed by the shrinking of the connective-tissue net into a compact body (corpus fibrosum), after which it is gradually removed through hyaline changes until a very fine scar tissue is left, which is at last lost in the ovarian stroma.

(8) The blood-vessels of the corpus luteum are quite resistant, and the larger ones are among the last structures to give way in the process of retrogression.

(9) The office of the corpus luteum is that of a preserver of the ovarian circulation, which exercises its function almost perfectly in the younger woman, but which at last, with the increasing density of the stroma, begins to fail in its activity, its remains being slowly or imperfectly absorbed, until these deposits finally exert the opposite influence and hasten the laming of the circulation.

(10) Cessation of circulation is induced, not through the disappearance of follicles *per se*, but through a densification of the ovarian stroma and a destruction of the peripheral circulation, which prevents their development.

Epitheliomatosis of the Breast.

C. G. Cumston (*Annals of Surgery*, December, 1898) states that this disease involves only the epidermis, which is but slightly thickened. There is no underlying infiltration nor induration. The following lesions are met with: Dartre's bodies are found on the thickened borders of the epidermis. These bodies, when they are typical, are apparently a variety of rounded cysts, clear at the periphery, with their limiting membrane, occasionally presenting flattened nuclei, and containing, or rather including, another cell with its protoplasm and nucleus. The protoplasm is only slightly stained, while the nucleus, which is always large and well-stained, shows signs of karyokinesis. Towards the centre of the lesion these bodies are more numerous, and at last completely obstruct the interpapillary spaces. The entire epithelium is then composed of pseudocystic cells, which are completely wanting in uniting filaments. These changes are quite as marked at the basal membrane, near the generative layers, as in the midst of the interpapillary columns. During all this process all keratogenic evolution has entirely disappeared. A kind of fibrinous exudate is immediately superposed on the rete mucosum of Malpighi, and at last the exudate disappears, the epidermis undergoes a complete abrasion, and is only represented by the decapitated trunks of the interpapillary columns. Below, the reactional infiltration is both limited and intense, and is seen as a closely packed accumulation of plasmatic cells. At certain points the diseased epithelium undergoes most important changes. The papillæ become enlongated, deformed, and present a bifurcation; the basement membrane being broken through by the vacuolated epithelium, sets up a perfectly distinct carcinomatous infiltration. The stroma is fibrous, while the alveolæ are filled with polygonal epithelial cells, with an oval nucleus and rather poorly off in chromatin. Many of them are undergoing karyokinesis. The cells are uniformly filled with a granular protoplasm. The affection rarely attacks both breasts. When epitheliomatosis occurs in the breast, the presence of a carcinoma in the latter is sure to occur sooner or later. If it were not for this, epitheliomatosis would, in all probability, continue indefinitely. Cumston believes that total excision is the only way to bring about a cure.

Chronic Valvular Disease in Pregnancy.

Jess (*Münchener medicinische Wochenschrift*, October 4–11, 1898) concludes as follows from a study of twenty-nine cases: A slight hypertrophy of the heart muscle during pregnancy is now very generally admitted. A diseased heart, in which the compensatory hypertrophy has been carried to its furthest point, is not in a position to overcome the increased resistance to the circulation presented in pregnancy, and hence dilatation occurs. The dangers encountered during parturition are due to the pains, the mental excitement, and the emptying of the uterus, with the consequent fall of blood-pressure. This fall of blood-pressure may eventually lead to edema of the lungs and death. Of the twenty-nine cases, twenty-three were examples of mitral disease, mostly stenosis, three of aortic disease, and three of combined mitral and aortic disease. From a study of these cases it is obvious that many women with latent heart-disease can get over the dangers of childbearing. There was only one fatal case in the twenty-nine, and the total number of births was 114. The author then analyzes the recorded cases. Here the death-rate is much higher,

as only the severest cases would be admitted into hospitals. Leyden says that 40 per cent. of severe cases of heart-disease in women die as a result of child-bearing. In three of the author's cases similar symptoms developed to those seen in the fatal case, but they passed off. In one case symptoms of disturbed compensation appeared, in each ten pregnancies, but they were really only threatening after the last pregnancy. In three cases symptoms only appeared in the fourth pregnancy, and in another two cases in the sixth pregnancy. In three cases the patients even said that they were better during pregnancy. Childbearing is borne almost as well by those with perfectly compensated heart-disease as by the healthy, and this was so in sixteen of the author's cases. His figures also show that abortion is relatively common in those with heart-disease. The author concludes that in slight and well-compensated heart-disease childbirth is usually well borne. After repeated pregnancies symptoms may arise. In severe, uncomplicated valvular lesions, and especially mitral stenosis, childbearing is harmful. The author has not seen any special ill effects in aortic disease. Where symptoms of valvular disease have existed for some years, marriage must be forbidden, and especially also in women who have to work.

Fever in the Puerperium.

Williams (*American Journal of Obstetrics*, July, 1898) reports the results of the bacteriological examination of forty cases of fever occurring in the puerperium, taking cultures in all cases in which the temperature rose to 101° F. in the cases confined in the hospital, and where the temperature reached 102° in the out-patient cases, and in his own practice.

His method of taking the cultures is, with the patient in Sims's position, under the most thorough aseptic precautions, to introduce a sterilized curved glass tube, twenty-five centimetres long and four millimetres in diameter, into the uterus up to the fundus. The uterine lochia is then aspirated into the tube by a syringe-bulb, the tube is withdrawn and immediately sealed at either end to preserve for examination.

He found streptococci in eight cases, staphylococci in three, colon bacilli in six, gonococci in two, diphtheria bacilli in one, typhoid bacilli in one, gas bacilli in one, miscellaneous bacilli in seven, and cultures were sterile in sixteen cases. In several of the latter bacilli were seen in preparations, but there was no growth. A mixed infection was found in several of the cases. In one case malarial plasmodia were found in the blood.

Streptococci, which are conceded to be the most common etiological factor in the fatal forms of puerperal infection, were found in 20 per cent. of the cases, none of which were fatal. He believes in the great practical value of careful bacteriological examinations of the uterine lochia, and remarks on the great relief experienced at finding the uterus sterile in patients with a temperature of 103° to 104° F. on the third and fourth days.

Further Uses of Ureteral Catheter.

Dr. Kelly (*Maryland Medical Journal*, May 4, 1899), at a recent meeting of the Johns Hopkins Medical Society, spoke of some further uses of the ureteral catheter. He said that it seemed some months ago that certain discoveries would limit very much the use of the renal and ureteral catheter.

It was found to be possible to separate the urines and retain them separated in the bladder until discharged from that organ by tubes. This was done by means of an instrument, which consisted of a tube with a solid septum running down the centre and projecting beyond the end of the glass tube, so that urine running down from one ureter remained on its own side of the septum, while that from the other ureter was confined to the opposite side. This method was published in the *Deutsche medicinische Wochenschrift* of October, 1898, and not long after Dr. Harris, of Chicago, was able, by the use of an instrument, to form two little pockets in the bladder for the accumulation of the urines from each side, which could then be drawn off by a suitable catheter. At first it looked as if these methods might limit very much the further use of the high catheter, but a new and very important use for them has developed.

In a certain number of cases we have to deal with vague but depressing pains in the side, particularly the right, and one is long in doubt as to whether they are renal, hepatic, or intestinal in character, or whether they are really hysterical. He has been able to include or exclude the kidney as a causative factor by the use of the catheter. When the ureteral catheter presses upon the pelvis of the kidney the patient will sometimes say that that is the very point where she had the pain. Further than that, he has been able to produce an attack of artificial renal colic by injecting a solution of boracic acid into the kidney through the catheter.

Dr. Kelly then referred to a recent case which illustrates well the value of the catheter. The condition was so like a floating kidney that he unhesitatingly made that diagnosis, but passed in a catheter first and produced an attack of colic, which the patient did not locate in the lump which was felt in front, but insisted that it was in the back. At the operation he found an enlarged gall-bladder in front of the kidney, which was in its normal position, so that the location of the pain by the patient outside of the kidney when artificial colic was produced was correct.

GYNECOLOGY.

UNDER THE CHARGE OF

CHARLES BINGHAM PENROSE, M.D.,

ASSISTED BY

H. D. BEYEA, M.D., AND H. L. WILLIAMS, M.D.

The Treatment of Extrauterine Gestation.

M. Segond (*Annales de Gynécologie*, October, 1898) discusses fully in a valuable paper the various methods of treatment to be applied to extrauterine pregnancy, in its different stages and complications. While recognizing that a spontaneous cure in rare instances does occur, he nevertheless lays down the invariable rule that all cases of this nature, when recognized, demand operative treatment. All treatment by electricity, injections with toxic substances, and the like, are spoken of as matters of historical interest only.

The subject is treated under two heads. (1) Treatment before four months; (2) treatment after four months.

PART I.—(*a*) When diagnosis is made of a developing fetus, with sac still unruptured, immediate laparotomy with removal of tube and ovary should be performed. Should the diagnosis be found to be incorrect, no harm will have been done, since other conditions with which it might be confounded would demand similar operation. When one side only is involved, the other side being normal, Segond advises abdominal section rather than operation *per vaginam*. If, with tubal pregnancy on one side, we have diseased appendages upon the other side, vaginal hysterectomy, with bilateral salpingo-oöphorectomy, is recommended. When tumor of the uterus—fibroma or carcinoma—is associated with tubal gestation, a like course is to be recommended, up to the fourth month. After this time the abdominal route, with probable hysterectomy, should be followed. Pregnancy in a rudimentary horn and tubo-interstitial pregnancy are always best treated through the abdominal opening.

(*b*) Treatment before four months, when the fetus has ceased to develop, or other complications are present. Under this head hemorrhage is considered, which is recognized as occurring in four distinct conditions, as follows:

(1) *Hematosalpinx*, often associated with some effusion of blood into the peritoneum, but forming a distinct tumor which can be enucleated. Here Segond considers abdominal section, with complete removal of the entire mass, to be the best treatment, although Martin, Muret, Kelly, and others have followed a more conservative method of operating through the vagina, opening the tube, removing the clot, and suturing. Probably to but few cases of tubal abortion or tubal mole would this method be applicable.

Here also, if a lesion is found in the other appendage, complete vaginal hysterectomy should be performed.

(2) *Encysted Hematocele.*—With the exception of certain small hematoceles, which cause few symptoms and have a tendency to spontaneous cure, this class of cases is also best treated by operation. The mode of interference is a disputed question, but Segond advises vaginal section. Complete cure with absorption of the exudate will follow in the majority of cases. If fresh hemorrhage or unexpected difficulties arise, or the other appendage is found to be diseased, vaginal hysterectomy can be performed. Douglas's pouch should be opened with a bistoury, and all pressure on the abdomen for the purpose of emptying the sac must be carefully avoided. This route is equally applicable to cases of subperitoneal pelvic hematocele and collections of blood at the sides of the pelvis. Laparotomy is only very occasionally necessary.

(3) *Hematocele where Several Hemorrhages have occurred.*—The cause of this condition is usually rupture of the tube, and abdominal section is recommended. Cases are quoted in which cure has been obtained by vaginal section, but in another case, when this method was attempted, hemorrhage followed which necessitated opening the abdomen, and patient afterwards died.

(4) *Hemorrhage into the Peritoneal Cavity.*—This results from rupture of the tube, and is most apt to occur between the eighth and twelfth weeks. Tubal abortion will likewise cause profuse fatal hemorrhage. The earlier the rupture, the more dangerous it is; likewise the danger is greater if the peritoneum is healthy and free from inflammation and adhesions. In some cases the hemorrhage is fatal within a few hours. Expectant treatment, in the hope that

the blood may become encysted, is entirely unjustifiable. Immediate abdominal operation is the only reasonable method of treatment.

(5) *Treatment of Septic and Suppurative Complications.*—The diagnosis of this condition is often difficult, especially as pelvic peritonitis and cystic or suppurative disease of the tube or ovary may be attendant with tubal pregnancy. If the collection is limited, unilateral, and easily accessible, the vaginal incision is to be preferred. But if the appendages are diseased on both sides, vaginal hysterectomy is recommended, provided the mass is not too great to be extracted *per vaginam.* If the gestation has passed the fourth month, and the mass has risen well out of the pelvis, the abdominal route should be followed, accompanied, if necessary, with complete hysterectomy.

Part II.—*Treatment of Extrauterine Pregnancy after Four Months.*—(*a*) *If the Fetus is living.*—Here opinions differ widely. Some practitioners advise immediate operation, without regard to the life of the child. Others prefer to wait until after the seventh month, when the child is viable. The writer holds that unless it is possible to keep the mother under constant observation, prepared to operate at any moment in case unfavorable or dangerous symptoms arise, an operation should be performed as soon as possible after the diagnosis has been made. Abdominal section is the only method to be considered. Segond advises that the placenta should usually be undisturbed, but the fetal sac should be drawn outside the peritoneum and there stitched. To this, however, he makes the following exceptions: (1) If entire removal of sac and placenta appears easy; (2) if the placenta is partially detached and hemorrhage is continuing; (3) when the fetus lies free in the abdominal cavity and no sac is found; in all of these the placenta should be removed before closing the abdomen.

(*b*) *If Complications arise or the Fetus dies.*—Internal hemorrhage is liable to occur at any time. It may occur as slow bleeding, frequently repeated, or it may appear as a sudden, profuse hemorrhage into the peritoneal cavity. Here operation is almost imperative, and it is frequently necessary to remove the placenta, on account of its partial detachment. Should any signs of infection appear, with the death of the fetus, operation should be performed at once, and the placenta removed if possible. When this cannot be done, the sac must be stitched outside the peritoneum and drained.

When the fetus is dead Segond advises waiting for several weeks—from four to six—to enable the placental circulation to become somewhat obliterated before operating. Here generally the sac should be rendered extraperitoneal and the placenta left behind. If the fetus has been long dead, the same treatment is to be followed; but if the sac is so low in the pelvis and adherent that it cannot be removed, a counter-opening for drainage should be made in the vagina. In some cases, where neither of the above methods are advisable, it may be best to remove the uterus. In the presence of tumor of the uterus, and in the rare cases of interstitial pregnancy, hysterectomy may also be required. In a few rare instances the gestation sac has been known to remain for years without causing trouble, but it may suppurate at any time. The cyst so formed may occasionally be removed by abdominal section, or, if fixed low down in the pelvis, may be drained by vaginal incision. If drainage has taken place spontaneously into the rectum, vagina, or bladder, or through the abdominal wall, dilatation of the opening will usually permit complete removal of the contents. When, however, opening has occurred into the rectum, it is usually advisable to make a counter-opening into the vagina, or through the abdominal wall.

PATHOLOGY.

UNDER THE CHARGE OF
JOHN GUITÉRAS, M.D.,
ASSISTED BY
DAVID RIESMAN, M.D.

The Action of Streptococci and their Toxins on Various Organs of the Body.

Homen and his pupils (*Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie*, Band xxv, Heft 1) have undertaken an elaborate study of this subject, which is subdivided into the following parts: (I) The action of streptococci and their toxins on the peripheral nerves, spinal ganglia, and spinal cord (Homén and Laitinen); (II) the action of streptococci and their toxins on the liver (Björkstén); (III) the action of streptococci and their toxins on the lungs (Silfvast); (IV) the action of streptococci and their toxins on the heart-muscle (Tallgvist); (V) experimental studies on the elimination of streptococci by the kidneys (von Bonsdorff); (VI) experimental studies on peritoneal infection with the streptococcus (Wallgren). It is worthy of note that these careful investigations were made in far-off Helsingfors, the University of Finland.

(I) In the first series of experiments the bacteria or their toxins were injected directly into a nerve or into the spinal cord. The toxins were obtained by precipitation of the culture-fluid with ammonium sulphate or amyl alcohol. A certain degree of immunity could be secured in rabbits by the injection of these toxins. This immunity was, to some extent, hereditarily transmissible.

The injections into the nerves, both of toxins and of bacteria, were made into one sciatic nerve. When bacteria were employed, the nerve in its entire course, at least in animals that died within a week, was injected, swollen, and edematous; the spinal meninges generally showed hyperemia, as did also the cord; rarely the cord presented softening and cavity-formation. In the animals that had received injections of toxins the macroscopic reaction was slight, —the nerve was somewhat swollen and grayish-red. The animals emaciated markedly, but lived much longer than those inoculated with bacteria.

Microscopic Examination.—After bacterial injections into the sciatic nerve changes can be seen along the entire nerve, usually also in the corresponding spinal ganglia and roots and spinal cord. At the point of injection and centrad small hemorrhages are seen in the epineurium and perineurium as well as in the nerve-bundles; also small cell-infiltration and destruction of nerve-fibres. Towards the spinal ganglia the changes grow less in intensity. The alterations peripherad of the point of injection are quite diffusely spread over the cross-section of the nerve, and are often more intense than in the proximal parts.

The spinal ganglia, in the acute cases, show some leucocytic infiltration and degeneration of the ganglion-cells. The roots show changes also, especially the posterior roots. In the meninges small cell-infiltration and hemorrhages were frequent; and in the cord overfilling of the vessels and small hemorrhages, especially at the periphery, can be seen. In connection with

these hemorrhages, but also independently of them, alteration and destruction of nerve-fibres are found, and in older cases a condensation of the neuroglia. The cord-changes are most marked along the posterior septum, and in the posterior columns, the sensory neurons being in general more affected than the motor. In many instances the cells of the anterior also show degenerative changes. These cellular changes must be due to the ascent of bacteria along the nerve and its roots or to the toxins. Bacteria could be demonstrated in the inoculated nerve along its entire course, both proximally and distally to the point of inoculation. They were also found in the posterior roots, the spinal ganglia, the meninges, and the cord. In many cases they were also found in the subarachnoid space of the brain.

The bacteria seem to spread along the lymph-paths and the large serous cavities of the nervous system. Occasionally bacteria were found in the opposite uninjured sciatic nerve; this, the author thinks, is possibly due to a retrograde transport along the lymph-paths.

The changes in the nervous system were quite the same as those described when the bacteria were inoculated directly into the spinal cord. The lesions following injection of the toxins were essentially the same as those produced by direct bacterial inoculation, and this suggests the view, the author remarks, that the bacteria produce their chief effects through the medium of their toxins.

In general, the effects are at first degenerative in nature, and are later followed by inflammatory and sclerotic, sometimes by destructive, processes. At times the phenomena are from the beginning more of an exudative character. The experiments in the author's opinion supply a support for the theory that many spinal affections are infectious or toxic in nature, and also offer an anatomic basis for the theory of ascending neuritis.

(II) Björksten's conclusions are: (1) In general streptococcic infection, regardless of the manner in which the organisms are introduced, the bacteria are, in the early cases, demonstrable in the liver, but not in the older ones (after the thirteenth day after the operation). In a foot-note it is stated that he once found the bacteria in the liver of a rabbit that died fifty-six days after intravenous inoculation. (2) The bacteria lie between the liver-cells, rarely in them or in the blood-capillaries. (3) The parenchyma-cells, in the neighborhood of a bacterial accumulation, are altered. (4) Neurotic foci and round-cells occur often; the latter may be found, and exceptionally also hemorrhages, independent of neurotic foci. (5) The liver can be infected through the common bile-duct; in early cases streptococci are found in the biliary channels and in their neighborhood; the cells contiguous to these channels often show degenerative changes.

The injection of toxin directly into the liver produces chiefly degenerative changes. Injection into the common bile-duct leads primarily to degeneration of the cells next to the bile-channels; round-cells are also seen, and later a distinct increase of the fixed connective-tissue cells, especially in close proximity of the biliary passages. The injection of the toxin into the sciatic nerve or the veins may lead to the formation of small degenerative or neurotic foci in the liver.

(III) The lungs of rabbits have a considerable resistance against the action of living streptococci, whether these are injected into the trachea or introduced through inhalation. The action of the bacteria was facilitated, in the case of intratracheal injections, by a cooling of the body, or especially of the thorax, and in the inhalation experiments by a previous inhalation on the

part of the animals of some mechanically irritant particles. The pathologic process, both when bacteria and when toxins are used, begins with an emigration of polynuclear leucocytes and desquamation of the alveolar epithelium, and the exudation of a coagulable fluid. The inflammation may be diffuse or focal. The majority of streptococci die in the alveolar exudate; to what extent phagocytosis participates cannot be readily determined.

(IV) In experimental streptococcus infection the myocardium is often affected, especially after intravenous inoculation. Usually the myocarditis is an isolated affection; occasionally it is accompanied by pericarditis or valvular endocarditis.

The changes in the interstitial tissue may be localized or diffuse; they are most common in the left ventricle, the ventricular septum, and the papillary muscles. Parenchymatous changes in bacterial inoculation are generally slight. Hemorrhages into the parenchyma and beneath the pericardium are the rule. The blood-vessels show a perivascular round-cell infiltration and later, in some cases, a thickening of the adventitia.

After toxin-injections the parenchymatous changes predominated in the early stages. Later interstitial changes seem to take place.

The muscle-fibres show hyaline or waxy degeneration, often also vacuolation; fatty changes may be present. The eventual result is an increase of connective tissue.

Thus it seems that streptococcus infection in the rabbit can lead to a myocarditis with the formation of small heart-schwielen and hyperplasia of the interstitial tissue.

(V) Von Bonsdorff found ordinarily but slight changes in the kidney after streptococcus-infection. When bacteria were present in the organ, they were usually found in the capillary tuft of the glomerulus, more rarely in the intertubular capillaries, and very rarely in the tubules. They were not seen in the capsular space. As to the elimination of streptococci, it is questionable whether that is possible in a normal kidney. It seems that the passage of the bacteria requires certain changes in the organ.

(VI) Wallgren's conclusions are as follows: Virulent streptococci injected into the peritoneal cavity may, even in the absence of a special predisposition on the part of the animals, produce in small doses already a fatal peritoneal infection. If virulent streptococci are injected in doses under a certain minimum, the peritoneum can rid itself of them, although the abdominal wall in the neighborhood of the puncture becomes generally infected. The infection of the abdominal wall is of no special importance in the development of peritonitis.

Streptococci of slight virulence cannot develop in the peritoneal cavity of normal rabbits.

The protection of the peritoneum resides, apart from its ability to form adhesions, in its great resorptive power, in the activity of the leucocytes contained in it and passing into it, and possibly also in the function of the endothelial cells. The leucocytes contribute to the conquest of the streptococci through phagocytosis, through their decomposition products, and possibly also through their secretions.

Phagocytosis, in case of virulent streptococcus-infection, occurs early, ceases then entirely, but may reappear in a later period. When the streptococci are less virulent phagocytosis seems to continue as long as streptococci are present in the peritoneal cavity.

The streptococci may exert a destructive action on the leucocytes. This is characterized by an alteration and disappearance of the amphophilic granulations of the polymorphnuclear and polynuclear leucocytes, which process is most marked, in the case of the cells enclosing streptococci, in the granules surrounding the streptococci.

As long as streptococci are present in the peritoneal cavity, as well as during the days (one to two) immediately following, the majority of cells are polymorphnuclear and polynuclear leucocytes; then follows, for a time, a leucocytosis which is, in contradistinction to the first, mononuclear.

Fibroma of the Vulva.

Storer (*Boston Medical and Surgical Journal*, December 15, 1898) reports a case of fibroma of the vulva, and reviews the literature of the subject.

In 420 primary neoplasms of the external genitals in women Williams found only seventeen fibromata, or only about one in 600 of all the new growths in women he tabulated.

The most common seat of fibromata of the vulva is one or the other labium majus, therein differing from the malignant growths, which are more apt to arise in the labia minora or from the clitoris. It has been claimed that vulvar tumors are more often found upon the left than upon the right side, as are also, it is said, cysts of Bartholin's gland, but this does not seem borne out by the cases that I have been able to collect.

The fibrous and fibromyomatous tumors that are seen in this region may have their origin in two main sources: (1) The subcutaneous connective tissue, and (2) the connective tissue and terminal muscular fibres of the round ligament, and possibly in muscular fibres in the skin, while, as curiosities, may be mentioned tumors arising in (*a*) the pelvic fascia and periosteum of the bony pelvis, (*b*) the recto-vaginal septum, and (*c*) the uterus. Largeau, for instance, removed a cystic fibromyoma of seventy-five pounds' weight, the pedicle of which, apparently attached to the left labium majus, was found to run far back into the pelvis, presumably to the uterus, although the operator did not care to trace it to its origin.

As would be expected, fibromata of the vulva are more common in the colored race than in the white. Thus Ramsey saw twelve cases in negresses to three in white women. They generally first appear in young adult life,—that is, at the period of a woman's greatest sexual vigor and activity. There has often been noted the increase in size seen in my case during menstruation and pregnancy, with subsequent decrease with the ebb of the menstrual tide. This vascular menstrual increase is, perhaps, more marked in lipomata and myomata than in the more densely constituted fibromata. Occasionally a case is seen in which there is a permanent increase in size following unwonted activity of the sexual system, as in that of Gillette, in which a girl who had had for fifteen years a trivial tumor in one labium found that, upon her becoming pregnant for the first time, it grew daily, until, when she was eight months advanced, it was the size of the tumor I have shown to-night. Such rapid growth is, however, most exceptional, and always should excite suspicion of malignant degeneration.

From their situation, and the extreme elasticity of the tissues in which they are embedded, these tumors quickly become pedunculated, a tendency perhaps more marked in tumors arising in the subcutaneous connective tissue than in the more firmly attached fibres of the round ligament.

General Infection with the Gonococcus.

Colombine (*Centralblatt für Bakteriologie, Parasitenkunde, und Infektionskrankheiten*, Band xxiv, No. 25, 1898) reports a case of gonorrhea which was complicated with bubo, and with suppurative epididymitis and parotitis. The gonococcus was found, unaccompanied by any other bacteria, in all three of these complications, and was also found in the circulating blood. The patient recovered.

In order to test the identity of the coccus cultivated from the circulating blood, it was inoculated into the urethra of a young man. The first symptom of urethral inflammation appeared the day after the inoculation, and on the second day a typical gonorrhea was present. From the pus of this experimental gonorrhea the same coccus was again isolated in pure culture. The experimental disease lasted many months and was typical in its course, so that the identification of the coccus cultivated from the blood may be said to have been as complete as possible.

The Bacteriology of Pertussis.

Otto Zusch (*Centralblatt für Bakteriologie, Parasitenkunde, und Infektionskrankheiten*, Band xxiv, No. 20, 1898) sums up our present knowledge of the bacteriology of whooping-cough, and reports the results of his study of twenty-five cases. In each of these cases peculiar small bacteria were found in the sputa, often in large numbers. They were sometimes seen in clumps or masses, or in leucocytes, and are probably identical with the bacteria described by others in this disease.

The bacteria seem to be more numerous in uncomplicated cases. When marked bronchitis or pulmonary complications supervened they diminished in numbers and were replaced by other organisms. This would seem to indicate that the organism does not infect the lungs.

It is a short, small-sized bacillus, which grows on ordinary culture media. Animal experiments gave no positive results.

A Case of Erythromelalgia with Microscopical Examination of Tissue from an Amputated Toe.

Mitchell and Spiller (*Journal of Nervous and Mental Diseases*, February, 1899) report a case of erythromelalgia in which the signs of the disease were almost confined to one of the great toes. Amputation of the toe had been resorted to, although considerable doubt was felt as to the benefit to be derived from the operation. The nerves of the toe were intensely degenerated, and the vessels presented a high degree of arteriosclerosis. The amputated bones were larger than the corresponding ones in a normal adult male. The case reported by Auerbach and the one by Mitchell and Spiller are the only cases on record in which important pathological changes have been found, since the disease was first described in 1872. Drs. Mitchell and Spiller believe that involvement of the sensory fibres anywhere between the spinal cord—or possibly within the spinal cord—and the peripheral ramifications is capable, under certain circumstances, of causing erythromelalgia; though hysteria may present similar symptoms.

Edema in Bright's Disease.

Reichel (*Centralblatt für innere Medicin*, October 15, 1898) states that several years ago he expressed the opinion that impaired functional activity of the kidney led to a physical alteration in the tissues, owing to the retention of toxic substances in the blood; this produces the edema, and also cardiac hypertrophy, as a result of the increased arterial tension. Reichel has undertaken a series of experiments to support this view. He has compared the power of absorption in renal patients with that in patients with cardiac disease, as well as with that in healthy subjects. After the injection of fifty cubic centimetres of saline solution in these cases, he found that absorption occupied a much longer time (sometimes eight or ten days) in renal patients. The normal transudation and resorption of the tissue fluids depends on metabolism and the functional activity of the kidneys. Reichel claims that the dropsy of renal disease is due to an alteration in the power of absorption.

The Pathological Histology of Acute Tonsillitis.

Goodale (*Journal of the Boston Society of Medical Sciences*, January, 1899) contributes an article on the above subject. His conclusions are as follows: Acute tonsillitis, due to infection by the streptococcus pyogenes and the staphylococcus pyogenes albus and aureus, is characterized histologically by a diffuse inflammation of the parenchyma of the organ, appearing in the form of an increased proliferation of lymphoid cells and of the endothelial cells of the reticulum, due probably to the absorption of a toxin formed in the crypts. While bacteria are rarely demonstrable in the tonsillar tissue in cases characterized by purely proliferative lesions, yet at times infection of the interior of the follicle occurs, giving rise to circumscribed suppuration and the formation of abscesses which eventually discharge into the crypts.

Multiple Melanosarcoma with General Melanosis.

Hensen and Nolke (*Deutsche Archiv für klinische Medicin*, 3te und 4te Hefte, 1899, Band lxii) report the case of a man who had a melanotic tumor of the neck, which was removed, but within a week metastatic growths appeared, and fifteen of these were extirpated about eight days after the first operation. But metastasis proceeded rapidly, and the patient soon died. The general skin and all the organs and tissues, with the sole exception of the brain, were the seat of a diffuse melanosis. The latter was chiefly due to a pigmentation of the connective-tissue cells; the parenchyma-cells were not pigmented, except in the kidney, where, in view of the function of the cells, it was to be expected. The pigmentary deposit in the skin, apart from the secondary tumors, was entirely in the corium, not, as is normally the case, in the epiderm. Chemically the pigment contained a large amount of sulphur, and a trace of iron could be demonstrated in the ash. Spectroscopically, the pigment was characterized by the dark band in the violet end of the spectrum.

DERMATOLOGY

UNDER THE CHARGE OF

LOUIS A. DUHRING, M.D.,

ASSISTED BY

M. B. HARTZELL, M.D.

Is Eczema a Parasitic Disease?

Torok (*Annales de Dermatologie et de Syphiligraphie*, No. 12, 1898), in a critical study of the monograph upon eczema, recently published by Leredde, concludes as follows: In the consideration of eczema, in order to avoid confusion, it is always necessary to employ the terms used in the same sense as the authors cited. The impetiginoid lesion, which Unna calls true vesicular eczema or eczema from inoculation, is not an eczematous lesion, but a lesion belonging to impetigo. Consequently, if one succeeded in demonstrating that the morococcus, which Unna claims is the true cause of eczema, is a well-individualized coccus, and that it is the cause of the above-mentioned impetiginoid lesion, one would not yet have proved that it is the cause of common vesicular eczema. And this so much the less since the vesicles of ordinary eczema contain but rarely morococci. The presence of morococci in the scales of chronic eczema only proves the saprophytic—not the parasitic—*rôle* of these organisms. The clinical facts invoked in favor of the parasitic theory admit of other interpretations; and there is not, so far, a single established fact in favor of the parasitic nature of eczema.

Angiomatous Tuberculide of the Lower Extremities (Angiokeratoma of Mibelli).

Leredde and Milian (*Annales de Dermatologie et de Syphiligraphie*, No. 12, 1898), from a clinical and histological study of a case of angiokeratoma of the lower extremities, occurring in a girl, 19 years old, associated with cervical adenopathy, conclude that this affection is due to the same cause as lupus erythematosus, erythema induratum, and other tuberculides. Lesions of the glands, of the lungs, and ancestral tuberculosis ought to be sought for in these cases. By its vascular alterations angiokeratoma is related to certain tuberculides. It may be accompanied by grave lesions of the deep vessels, comparable to those observed in necrotic tuberculides, such as erythema induratum and acnitis.

The Primary Lesion of Acne, Lupus of the Face, Lepra, and other Diseases of the Lymph-Capillaries.

Sticker (*Dermatologische Zeitschrift*, Band v, Heft 6), having observed ulcerative lesions of the mucous membrane of the nose in the majority of cases of leprosy, believes that the nasal lesions are primary, just as the sclerosis upon the penis is the primary lesion in syphilis. Prompted by the analogy in form and distribution of the eruption between lepra, acne, and lupus, he has sought to learn whether these two latter affections also have their origin in the nose.

As the result of his investigations he has discovered in almost all the cases of acne, lupus vulgaris, and lupus erythematosus, coming under his observation, changes in the nasal mucous membrane wholly analogous to those observed in lepra. In thirteen cases of acne the lesions in the nose were mostly shallow ulcers of the septum, which contained coarse cocci and diplococci, such as were also found in the acne nodules of the skin. In eight cases of lupus vulgaris there were, without exception, ulcerations and vegetations upon the septum. In two cases of lupus erythematosus there was a perforation of the cartilaginous septum, and in tissue removed by scraping isolated tubercle bacilli were found.

Naphtalan.

Saalfeld (*Dermatologische Zeitschrift*, Band v, Heft 6), who has employed naphtalan in 115 cases of cutaneous disease of various kinds, finds it an efficacious remedy in eczema in the most diverse stages, in mild cases of psoriasis, especially when it affects the face and when the skin is irritable, in dermatitis produced by the application of too strong remedies, in the milder cases of herpes tonsurans, and in prurigo. A favorable effect was also noted in both parasitic and ordinary sycosis, in lichen ruber, and dermatitis herpetiformis. A special advantage possessed by naphtalan is the rarity with which it produces irritation, but six cases out of the whole number in which it was used not tolerating the remedy.

Peculiar Ringworm of the Hands.

Pringle (*British Journal of Dermatology*, February, 1899), at a meeting of the Dermatological Society of London, exhibited a patient, a man, 28 years old, suffering from an eruption on the backs of both hands of six weeks' duration. The eruption consisted of numerous scaly patches of dermatitis, marginate in character, distributed over the dorsal surface of both hands and of all the fingers as far as the roots of the nails. One patch, situated over the metacarpo-phalangeal joint of the right index-finger, was eczematous and discharging. The hair, which was unusually abundant over the sound skin, was scanty over the diseased patches. Microscopical examination of the hairs demonstrated the presence of abundant mycelium. The case recovered in a few days under the use of an ointment of salicylic acid and ammoniated mercury.

Acne Keratosa.

H. Radcliffe-Crocker (*British Journal of Dermatology*, January, 1899), under the above title, reports four cases of a hitherto undescribed affection. The malady is characterized by the presence of finger-nail-sized, well-defined, excoriated blood-crusts situated upon the cheeks, particularly about the corners of the mouth. Scars of old lesions are abundant. The eruption is symmetrical, the lesions coming out singly or in small numbers at irregular intervals, and lasting for a considerable time. They begin as firm, red, tender lumps which become pustular. The most characteristic feature of the affection is the presence in the lesions of soft plugs, of about a twelfth of an inch long, which produce great irritation, and occasionally pain and tenderness, until they are

removed. Healing follows the extraction of these plugs, but requires weeks and months. If all the plugs are not removed, there is a tendency to recurrence. By the appearance of new lesions the disease is kept up for years, in one case for forty years. The plugs, which were examined by the author, were composed of corneous epithelium, a few prickle-cells, and cell-nests. The etiology is uncertain.

The Radical Extirpation of Lupus.

Buschke (*Archiv für Dermatologie und Syphilis*, Band xlvii, Heft 1), who has employed radical extirpation in eighteen cases of lupus, agrees entirely with Neisser and Lang that all palliative methods are to be considered only when, for any reason, radical treatment is impossible. He believes it altogether inadmissible to use the so-called conservative methods of treatment before proceeding to extirpation, as the disease is thus given opportunity to assume larger dimensions and the tissues put in a less favorable condition for excision. In the great majority of cases narcosis may be dispensed with, but the Schleich infiltration anesthesia may be used. The incisions should be made in the sound tissues in order to insure the inclusion of all the disease, and great care must be exercised that tuberculous material does not come in contact with the field of operation, both before and after the operation. The wounds are closed by suture when small, when of greater extent or when in the face, by Thiersch's transplantation or the grafting method of Krause. In the nature of things this method of treatment is only practicable in a certain proportion of cases, but the earlier it is determined to employ it the larger will this proportion become.

MISCELLANEOUS.

A Speech delivered by Dr. Agnew at a Banquet given him in April, 1888, by his Professional Friends in Celebration of his Fiftieth Year in the Practice of Medicine.

The manuscript of the following speech, which has never been published, has recently been presented to the University by a friend of the late Dr. Agnew:

Mr. President,—When I glance over this table and see so many distinguished and representative men of my profession, who have come to do honor to one of the humblest of their guild, I confess it is with a deep sense of embarrassment that I rise to respond to the complimentary sentiments embodied in your toast and in your address. I can say, without affectation, that had it been the pleasure of my friends,

a less conspicuous demonstration of their good will than the present would have been more in consonance with my feelings and taste.

It is a great distinction for any man, in whatever sphere of life he may move, to win the confidence and esteem of his fellows, and it is scarcely necessary for me to say how profoundly I realize this mark of your respect. Any man who has lived long in this world, and has taken a thoughtful retrospect of his past life, must be forced to confess that the influences and forces which have conspired to mould his character and to shape his destiny are most mysterious indeed. Plans constructed with infinite care have miscarried; fondly cherished hopes have been suddenly crushed with a shock as when a precious vase is broken to fragments on the pavement; glowing anticipations just about to be realized dissipated, in a moment, into thin, viewless air like earth mists before the morning sun. One of Scotland's gifted but unfortunate sons has condensed these thoughts into the expressive couplet,—

> "The best laid schemes o' mice and men
> Gang oft aglee."

And the great bard of England, rather the bard of all peoples and all times, has crystallized the same sentiment in those expressive lines,—

> "There is a destiny that shapes our ends
> Rough hew them as we may;"

and a greater than either has said it is not in man to direct his steps. About thirty-five years ago I came to this city a stranger. Though previously enjoying a large practice in a wealthy and populous district, yet the field was never a satisfactory one. The horizon seemed too contracted, the prospects uninviting. Possessing naturally strong anatomical tastes, I was able to gratify these to only a moderate degree by dissection of human bodies and the bodies of animals; yet the prejudice against studies of this nature was calculated to render their prosecution unpopular, not to say very embarrassing. The desire, therefore, to obtain a larger field for the gratification of the idol of my thought induced me to make Philadelphia my home. The scene of my early labors, as most of you know, was in College Avenue, in the Philadelphia School of Anatomy. This institution (not a chartered but a private one) had both an ancient and honorable history. It was here that Godman and Webster, and the elder Pancoast and Allan laid the foundation of their reputations. It was indeed a school of the prophets; a gymnasium in which were trained the great majority of the men who, as teachers and writers, have filled so large a place in the medical world. Among their names may be mentioned that of Gerhard, the pioneer of physical diagnosis in America; of

Wallace, who became professor of Obstetrics in the Jefferson Medical College; of Bridges, professor of Chemistry in the Philadelphia School of Pharmacy; of Keating, elected professor of Obstetrics in Jefferson College, but compelled to resign on account of failing health; of Henry H. Smith, professor of Surgery in the University of Pennsylvania; of Francis Gurney Smith, professor of Physiology in the same Institution; of your honored chairman, professor of the Principles and Practice of Medicine in the Jefferson Medical College; of Penrose, professor of Obstetrics in the University of Pennsylvania; of Brinton, one of the professors of Surgery in the Jefferson Medical College; of Garretson, the author of a popular work on Oral Surgery; and of Keen, professor of Surgery in the Woman's Medical College of Philadelphia. It was here that Brown-Séquard delivered his lectures on Operative Physiology, and it was here that Mitchell conducted his classic experiments on snake-poison and on many physiological problems, which have placed his name along-side that of Farrar, and given him a high place among the scientists of the present day. It was in this institution that, for several years, summer and winter, night and day,—rarely taking a vacation,—I studied the mysteries of this wondrous frame with a love and zeal which never flagged, and drew around me (notwithstanding the hostility of the two great medical schools), from the small beginning of twelve medical students, the largest private classes, only limited by the capacity of the building, that had ever followed a private teacher in this country. Those were happy days; yes, I think, the happiest days of my professional life. I was then master of my kingdom. Those old, dingy rooms had more attractions for me than the frescoed and fretted walls of a palace, and those anatomical odors were as sweet as those of Araby the blest. The curriculum of instruction consisted of lectures on descriptive anatomy, surgical anatomy, operative surgery, and dissections, and when I was induced to accept the Demonstratorship of Anatomy in the University of Pennsylvania, it was with reluctance and regret that I left the Philadelphia School of Anatomy. It is entirely natural that my thoughts should linger about College Avenue, for it was there that I formed those friendships which, like hooks of steel, have bound me to the men of every part of this country and not a few across the sea.

In 1854 a united effort was made to reopen the Philadelphia Hospital for medical teaching, the doors of which had been closed for several years. History furnishes innumerable instances in which the most momentous events have been determined by the most trivial incidents. All these fade into insignificance when contrasted with that which closed the doors of this great clinic against the profession. The cackle of a few geese saved Rome, a presumptuous cockroach barred

the gates of the Blockley Hospital. And let me say here, in parenthesis, that to Dr. Henry H. Smith and Dr. M. L. Ludlow, more than to all others combined, the profession and the country at large are indebted for the restoration of this important hospital to clinical instruction. By their unwearied and indefatigable perseverance, by their unceasing importunity, like the widow with the unjust judge, these men succeeded in revolutionizing the antagonistic and settled sentiment of the Board of Guardians, and gained the great conquest, and on the same day that the Hospital Committee made their favorable report Dr. Smith and myself were elected surgeons to the institution, and for twelve years, save for a short interregnum, when self-respect demanded the resignations of the Medical Board, I continued to discharge the duties of a clinical teacher of surgery in this hospital. In 1864 I was elected one of the surgeons to the Wills Hospital for Diseases of the Eye, fulfilling the duties of the place for a period of about six years. In 1865 I was honored by an appointment on the surgical staff of the Pennsylvania Hospital, and for about eleven years continued my services in that venerable institution, until the inauguration of a policy which compelled me to resign. Let me say here that I have made it a rule of life never knowingly to violate my sense of duty, and with the help of God's grace it has never cost me one moment's hesitation to turn my back on any proposition or place, however tempting, the acceptance of which would compel me to surrender my conscientious convictions of right. In 1877 the Board of Managers, of its own motion and unsolicited, with a cordiality and unanimity which I can never forget, re-elected me to my former place on the surgical staff. In 1867 I was elected one of the surgeons to the Orthopedic Hospital, then situated on Ninth Street, and which has grown to be one of the important institutions for the treatment of deformities in this country.

In 1870 the Trustees of the University elected me to the chair of Clinical Surgery in that institution, and a year later to the chair of the Principles and Practice of Surgery, and on the completion of the University Hospital building I was appointed one of the clinical professors of Surgery. Why I should have been honored with so many appointments to places of dignity and influence I know not, other and abler men could have filled them; but this much I can say, I never schemed or planned for one of them. Any place in the republic of medicine was honorable enough for me. I knew there were golden apples in the garden of Hesperus, but I was too much in love with my own particular study to attempt the play of Hercules and the dragon. My love for the profession was inborn, wrought into the very fibre of my mental organization, and inspired not by the honor at her

command, but from the unspeakable satisfaction and pleasure of being able to use her resources for the benefit of our common humanity. How long I may be able to continue in this good service I know not. This I leave to the wisdom of Him who numbers the hairs of the head and notes the height of the fall of a sparrow. When that supreme moment comes, I will be satisfied. I have had all that I could wish; more than I deserved. And now, gentlemen, this is a great honor which you have done me. To be the guest of such a company should satisfy the most exacting ambition, and let me say to each and all of my professional brethren here to-night, that I have no words which can fittingly express the profound obligations under which I am placed to your generosity and kindness.

An Expression from Lord Lister on the Cordial Relations between America and England.

Lord Lister, in a letter written to Professor J. William White from London, under date of February 27, 1899, says: "It has been a great source of happiness to us in England to know that the relations between the New and the Old Country have become so cordial. Not that I have personally experienced anything to the contrary at any time; for very much the reverse has been the case."

This expression of opinion from the greatest surgeon of the century, and from the most distinguished representative of our profession alive to-day, cannot fail to gratify every medical man in America.

Much has been heard from men in other professions, from public men, men of business, and men of letters, but we believe that nothing so definite has come from our own profession. It has added weight as representing the views of a man whose work has probably saved more lives than any other individual of this or any period in the world's history, and who, moreover, as the first medical peer in Great Britain, must feel the weight of his responsibility. It is not probable that either in speaking or in writing he uses the plural form without full justification for so doing.

BOOK NOTICES.

PROGRESSIVE MEDICINE.—A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 490 pages, 28 illustrations and 3 colored plates. Philadelphia and New York: Lea Brothers & Co.

A review of the first volume of this digest convinces us that the work is far in advance of any of its predecessors in this field of medical literature. Instead of offering to its readers a mere collection of brief abstracts of the various contributions which have appeared during the past year, and leaving to them the burden of selecting the useful from the useless, it presents a series of carefully prepared articles embodying all the advances, improvements, and discoveries which have been made during the year. The names on the list of contributors are sufficient guarantee of the value of the chapters which follow. It is, indeed, a source of great satisfaction to know as we enter these new fields of medical research that we are in the hands of a master who is thoroughly capable of leading us to that which is really worthy of attention and necessary to success.

The present volume includes: The Surgery of the Head, Neck, and Chest, by T. Chalmers Da Costa, M.D.; The Diseases of Children, by Alexander D. Blackader, M.D.; Pathology, by Ludwig Hektoen, M.D.; Infectious Diseases, including croupous pneumonia, by William Sydney Thayer, M.D.; Laryngology and Rhinology, by A. Logan Turner, M.D. (Edin.), F.S.C.S., (Edin.); and Otology, by Robert L. Randolph, M.D.

The book is beautifully printed and bound, and contains a number of excellent illustrations. The very moderate yearly price for this set of four volumes will undoubtedly create a large demand for them.

ATLAS AND EPITOME OF OPERATIVE SURGERY. By DR. OTTO ZUCKERKANDL, Privat-Docent in the University of Vienna. Authorized translation from the German. Edited by J. CHALMERS DA COSTA, M.D. Philadelphia: W. B. Saunders, 1898.

The object of the author to present an "epitome of operative surgery intended as an elementary work for students" has been well accomplished. An especial effort has been made to describe in detail and to illustrate particularly those operations usually performed by the student upon the cadaver in the practical course, while those operations performed by the skilled surgeon are less fully considered.

A special feature of this book, and of the series to which it belongs, is the large number of excellent colored plates. These, if well executed, are very useful to the student, as he has but a limited opportunity for clinical observation. In addition to the colored drawings there are 271 cuts which very fully illustrate the text.

There can be no doubt of the value of works of this class, which do not in any sense supplant the standard text-books, but which supplement them in a most useful manner, and Dr. Zuckerkandl's book is one of the best of its class.

An American Text-Book of Diseases of the Eye, Ear, Nose, and Throat. Edited by G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College, Philadelphia; Consulting Ophthalmologist to the Philadelphia Polyclinic, etc., and B. Alex. Randall, M.A., M.D., Clinical Professor of Diseases of the Ear in the University of Pennsylvania; Professor of Diseases of the Ear in the Philadelphia Polyclinic, etc. Philadelphia: W. B. Saunders, 1899.

This work treats of four special branches of medicine. The first part occupies more than one-half of the volume. The remaining three parts are given but one-third of the space each.

Piersol's article—the only one in the work, with the exception of Randall's (one of the editors), that is from the pen of a teacher at the University of Pennsylvania—is, as is usual with him, good.

Brubaker's is too meagre, while Dennett's seems unfitted and useless for college students.

Weeks's "Diseases of the Conjunctiva" deserves praise, and is by far the best chapter on conjunctival disease that has appeared in the English language. In the article on "The Röntgen Rays in Ophthalmic Surgery" is a mere detailed account of the author's method; Clark's and Williams's plans are simply mentioned, while not a word of reference is made to the method of Leonard. In the Otological and Laryngological Sections, the articles are fewer and more fully considered.

Sheppard's "Examination of Patients" deserves careful reading, being filled with many practical points.

Alderton's article is interesting and evidences much research; likewise with Newcomb's and Myles's.

The best chapter in the book is the one on "Neoplasms of the Upper Air-Passages," by Wright, of Brooklyn. It is logically arranged, shows care, and is filled with matter of the utmost interest.

Wright has again been used,—and not in vain. His "Neuroses of the Upper Air-Passages" is a masterpiece.

As a reference-book the volume is of value to the working specialist, but for students' use, as expressed by the title, it would have been better to have had the four branches of medicine treated separately in special volumes, and each given the proper amount of consideration and space that is due it.

PRACTICAL DIAGNOSIS. The Use of Symptoms in the Diagnosis of Disease. By HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Third edition, revised and enlarged. 8vo, pp. 624, illustrated with 204 engravings and 13 colored plates. Philadelphia and New York: Lea Brothers & Co., 1898.

The method of Dr. Hare's Diagnosis is fairly well expressed in the sub-title, "the use of symptoms in the diagnosis of disease." In the first part, the manifestation of disease in organs, the author takes up the different regions of the body and details the signs which indicate disease of these parts. Under this heading are also included a study of the urine and feces. A separate chapter (IV) is devoted to hemiplegia, but the brain as a whole is not considered: many of its disorders, however, are brought out in the chapters which treat of the disorders manifested in the hands, arms, and legs. The first part covers 442 pages. In the second part, the manifestation of disease by symptoms, the significance of such special symptoms as chills, fever, headache, and convulsions, is discussed.

If the student has the necessary ground-work in physiology and pathology, Dr. Hare's book will be found very helpful, without the danger of being misleading, which it would otherwise have. It has been much improved by the last revision. The illustrations are excellent and add greatly to the value of the text. We have noticed very few typographical errors. On page 316, in speaking of Flint's murmur, the text reads, "a presystolic murmur heard in the *sternal* area;" where probably the mitral area was intended.

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MEDICAL MAGAZINE.

MAY, 1899.

THE LATE RESULT IN A CASE OF IMPLANTATION OF SPONGE IN THE ORBIT AFTER ENUCLEATION.

By S. D. Risley, A.M., M.D.,

PHILADELPHIA,

Attending Surgeon, Wills' Eye Hospital; Professor of Diseases of the Eye, Philadelphia Polyclinic and College for Graduates in Medicine.

Mr. President and Fellows of the Section,—At a meeting of the American Ophthalmological Society in July, 1898, I presented a preliminary statement of the results following the implantation of a mass of sponge in the orbit after the enucleation of a shrunken eyeball. (*Vide* "Transactions of the American Ophthalmological Society," 1898.) The operation was performed on the sixth of the preceding June. Much of the trouble which usually follows the wearing of an artificial eye is due to the concave socket, which permits the accumulation of tears and mucus behind it. If it fits closely enough to prevent this, the air behind it is soon absorbed and the atmospheric pressure becomes painful and gives rise to congestion, often to an edema behind the concavo-convex shell. The design in implanting the sponge was to furnish a framework for the deposition of connective tissue in the orbit, and thus avoid the concave socket. One of the disadvantages of the operation, pointed out in July, was the length of time required, two or three months, for the absorption of the sponge and its replacement by connective tissue. In a foot-note to the above-mentioned communication, dated August 23, the statement was made that the sponge had entirely disappeared; that the orbit was well filled with

[1] Read before the Section on Ophthalmology of the College of Physicians of Philadelphia, March 21, 1899.

a firm mass of tissue covered with conjunctiva; that the stump moved with great freedom in all directions, furnishing a much better base for an artificial eye than is usually seen after ordinary enucleation. At that time, nearly three months after the operation, the result was very gratifying.

I now present this patient for inspection of what may be regarded as the final result, as about nine months have passed since the implantation. It will be observed that an excellent stump has been secured, but the result is no better than is often seen after the usual procedure. There is no longer any evidence of the sponge, and the increased quantity of tissue present in the orbit six months ago has largely, if not entirely, disappeared. Seeing the orbit for the first time to-night, no one would suspect any other procedure than a carefully performed excision. It should be borne in mind, however, that in this patient the original conditions were unfavorable. There was present, deeply placed in the orbit, only the shrunken remains of an eye lost from purulent inflammation at four years of age. It had become subject to recurring attacks of tenderness, which gave rise to marked irritation of the fellow-eye. It was firmly adherent to the orbital tissue, so that extensive dissection was required for its removal. It seemed probable, therefore, that there would be so much contraction during the process of healing that the subsequent comfortable use of an artificial eye, with satisfactory cosmetic results, was very doubtful. For this reason the sponge was inserted and covered by the surrounding structures and conjunctiva, the original intention having been to simply enucleate the shrunken stump.

It is fair, therefore, I think, to regard the ultimate result as a favorable one, notwithstanding the apparently complete absorption of the new tissue which was present six months ago.

A Physician's Gold Fetters.

One of the earliest fees for medical treatment of which there is any record is mentioned by Herodotus, who says that Darius gave the slave Democedes two pairs of gold fetters. The usual fee at that time in Greece was very small, about sixteen cents in our money, yet there were notable exceptions, as when King Antiochus paid $150,000 for medical treatment, and later, when the Emperor Claudian paid his physician about $20,000 a year. The latter was twice the annual income of the eminent physicians of that time.—*Medical News.*

OBSERVATIONS ON LARYNGEAL PARALYSIS DANGEROUS TO LIFE OCCURRING DURING THE PROGRESS OF TYPHOID FEVER.

By Alexander W. MacCoy,

PHILADELPHIA.

Several years ago my attention was called to a certain form of laryngeal paralysis occurring as a complication during the course of typhoid fever. Laryngeal complications arising in many of the acute infectious diseases have been studied and are well known in laryngological literature. Ulcerations, perichondritis, edema, etc., are quite generally known, and fairly common clinical facts. The various conditions dependent upon paralysis of the muscles of the larynx (*per se*) are not so familiar to clinicians, and often pass unrecognized as such or are mistaken for other affections, such as croup and spasmodic laryngeal conditions.

Recognizing that during an acute infectious disease like typhoid fever any structure of the larynx may be involved, we have to depend upon the laryngoscope for a correct diagnosis.

We can most simply classify the paralyses under the various functions performed by the larynx. Keeping clearly in mind that the chief function of sets of laryngeal muscles is to open and close the glottis, we can simplify the clinical facts by grouping them under the two heads of paralysis of *adduction* and of *abduction*. Paralysis of adduction, in its various forms, is of very great interest, and enters largely into our most interesting laryngological experiences; but it concerns *phonation* only,—a most wonderful function, but not necessary to life. Abduction, on the other hand, concerns the very *existence* of life,—respiration. A moment's faltering in the function of the openers of the larynx, and we cease to exist! Being, then, of so vital importance, we must promptly recognize, during the course of a prolonged and wasting acute disease like typhoid fever, the imminent risk to life when the abductor muscles are paralyzed.

Case I.—Several years ago I first saw a case of posterior cricoarytenoid paralysis in an acute affection. It was double or bilateral. It occurred in a case of typhoid fever at a suburban hospital. The subject was a young man, who had had a severe, prolonged, and com-

[1] Read before the Section on Otology and Laryngology of the College of Physicians of Philadelphia.

plicated attack. The patient had been ill for over two months, was greatly emaciated, and profoundly debilitated. One night he was suddenly seized with a suffocative attack simulating croup. Getting no relief whatever from remedies applied, I was asked to see the case. The patient was greatly distressed in his respiration and cyanosed. Inspiration was performed laboriously; each inspiration being accompanied by stridor; the patient appeared almost moribund. Laryngoscopic examination showed a complete double paralysis of the openers, the vocal bands remaining fixed in the median line. Accompanying paralysis of arytenoid muscles, with loss of tension, enabled the patient to get a little air through a small triangular slit at the most posterior portion of the glottis. As promptly as possible an adult intubation-tube was inserted into the larynx. This was accomplished without much distress or trepidation to the patient. The effect of the intubation was magical,—complete relief to breathing instantly followed, and in a few minutes the patient was in a quiet sleep.

Case II.—About six months after I saw the first case a second subject presented himself for consultation; he was a young man of 23 years. He wore a tracheotomy tube. The history showed that he had had a severe attack of typhoid fever in the South a few months previously. During convalescence he was seized with a grave suffocative attack, and was in such a serious condition as to require tracheotomy, which relieved him completely. Examination of the larynx showed a complete fixation of the vocal bands in the median line. This patient could not do without the tube, and he requires it to the present time. He has a most clever device of valve and rubber tubing, and rubber bulb connected with the canula, by which air is made to close the valve against the mouth of the canula, and so he is enabled to carry on conversation with ease and fluency. In this case intubation was attempted, but failed of introduction. The subject enjoys good health, and is active in business pursuits.

Case III.—During the fall of 1898 I was asked to examine a soldier in one of the city hospitals, who was suffering from great dyspnea. Laryngoscopic examination showed complete apposition of the vocal bands in median line, with enough relaxation of tension and arytenoidal paralysis to allow a little air to enter. Intubation was strongly urged, but the visiting physician was reluctant, and the subject died of exhaustion in a short time. In my judgment, prompt intubation in this case would have saved the man's life. This case made a deep impression upon me, and is responsible for the present paper. The literature of paralysis of the glottic openers (crico-arytenoideus posticus) is fairly voluminous. Double paralysis of the openers is somewhat rare in comparison with other muscles affected. It is of

such grave import, when double, that closer and more exact scrutiny by experts is a clinical necessity. I can compare its present clinical *status* in general medicine with that of tubal pregnancy years ago, when peritonitis covered the condition and the subjects died promptly. To-day tubal pregnancy is a definite, clearly defined, clinical entity, promptly treated and with marvellous results. It is greatly to be desired that, in all acute infectious diseases, the prompt recognition of laryngeal paralyses, especially those involving the glottic openers, may take a great step forward, and occupy a proper position in the field of clinical observation. While it is true that, in the pathology of laryngeal paralyses, there is yet a wide divergence of views and much contention, there need no longer be excuse for non-recognition of the severer forms of paralysis situated in the larynx.

HYPNOTIC SUGGESTION AS A PRACTICAL AID TO MEDICINE.[1]

By J. Madison Taylor, A.B., M.D.,

PHILADELPHIA.

It may be time to claim that hypnotic suggestion, in its lesser degrees, is earning a modest place as an auxiliary to practical medicine. How high this may reach in the esteem of reputable physicians depends largely on who shall experiment with it and how fairly they report their findings. When once the subject shall be purged of the atmosphere of humbug which has been so liberally and is so easily thrown around it by sensation-mongers, be they commercial, scientific, or dilettante, then good men, honest physicians, and sincere petitioners for accurate conclusions can proceed to give it sanction or make proper use of the impressionable states thus induced.

The province of hypnotic suggestion is to reawaken or develop latent or deadened powers already existent in the consciousness.

When the dangers of hypnotism are referred to, which is indeed the first question usually asked, I reply that there is a serious one which makes me pause, and that is the obvious peril to the operator of being branded as a charlatan. There are others, too, though careful observers find few, and those easily foreseen and forefended and not to be expected in the hands of reputable physicians to whom alone the

[1] Read before the County Medical Society, February 22, 1899.

matter belongs, excepting, of course, skilled psychologists, but they were safer to have a medical colleague in their work. The second question which usually arises is whether the artificial induction of states of suggestibility does or does not impair the will or disturb volitional control? This is answered in the negative by the experiences of recent and temperate writers. Most instances quoted of morbid susceptibility to suggestion and perturbation of the normal power of control are probably only where the subjects are of defective or unstable nervous equilibrium, and who are, therefore, over-readily susceptible to silly or evil suggestions however or by whosoever offered, of which the ranks of society supply so many pitiable instances. Upon an individual with inherently foolish or criminal tendencies it is distinctly possible that unwholesome suggestions can be made to develop into over-mastering impulses through which may ensue serious consequences. There is little, happily, on record to show that this possibility is formidable, and it is certainly not frequently operative in this connection one whit more than, if as much as, along with other remedial measures. Nothing can be worse than blundering, ineffectual medical measures repeated in dismal routine on those who are of the material of which cranks and hypochondriacs are made. Undoubtedly acts of folly may be suggested by many agencies and associations, and these can be finally performed, but it remains to be proven that hypnotic states, in the hands of reputable physicians, accentuate this or afford special direction. These foolish finalities are not necessarily of evil repute judged alone or at first sight.

My own experience in the use of hypnotic suggestion is confined entirely to efforts at relieving morbid states where other measures faithfully tried have either failed or effected little or required too much of time and money to be employed. Long, isolated rest in comfortable surroundings and the constant wise admonitions of the neurologist offering the combination of object-lessons, relaxation, nutritive forcing, and constant direct suggestion will most assuredly work large miracles, as those of us brought up in the influence of the Orthopedic Hospital know of our own knowledge and experience. Too often these conditions cannot be secured. Hypnotic suggestions in my hands have often done what has not been done after these measures have been amply tried.

Why one man is permitted to succeed with this form of suggestion where others have failed I do not know, but so it is, as is true indeed of other forms of remedial measures. I have been able to accomplish with this agency what others had not, and doubtless yet others may succeed with my failures if only they are sufficiently patient and persistent. Half-hearted attempts lead to little. It is much easier to write

a prescription and turn a troublesome case over to isolation and a nurse, masseur, and "the great healer, time."

I have never seen professionals and exhibitors in this art, and only a few physicians, who taught me little other than the fact that thoroughness and tact can be made to effect great things. This paper is founded on my own clinical experience, which I hope to have amplified as I learn more of the psychologic side of this most interesting subject.

A great stumbling-block to accepting the results of hypnotic endeavors is the fact that such simple and diverse methods bring about such potent findings. When this is reconciled and explained I for one can feel encouraged to go ahead with fuller confidence.

My method is the simple one of securing the full consent of the patient after ample explanation of the object to be obtained, then to state that several attempts may be necessary to induce the complete quiet and relaxation of mind and body in which the suggestions for betterment are to be planted. I then fix the attention in some way, continuing the suggestions as to the stages of quiet to be expected, and finally close the eyes by a touch of the hands, repeating the suggestions and any special ones needed and finally begging for co-operation. Of course difficult cases require more time and patience and often some bizarre display. I have consumed six weeks, a half hour or more each day, to get a hysterical spasm relaxed. Boundless patience is often required, much more than many operators seem willing to give.

Why, then, is a person influenced more powerfully under hypnotism than in the normal state of attention? It is to be hoped this question shall be answered by psychologists in such fashion that the physician can comprehend and use it. My own impression is that whereas in the every-day state of a person who seeks medical advice and who avowedly listens to our counsel, many factors enter into and impair the attitude of attention and acquiescence they vouchsafe both as to degree and kind. The human ear is presumably devised as an avenue of information and conviction to the brain and consciousness, but too often it seems only to fulfil the purpose of listening for a pause in the flow of admonition, so that the tongue of the petitioner may secure an opportunity to give itself voice for reply. The normal state of consciousness is complicated by many disturbing factors, some normal, such as are caused by many varying phases in the life of relation; some abnormal, such as outgrow from vicious mental habits (which invariably exist in all prolonged instances of ill-health); some are due to the inherent faults of our symmetrical powers and development in the higher intellectual planes. If this foggy atmosphere can be re-

moved, allowing of a direct relationship, rapport, between the subject and suggester a more perfect impress can be made upon the receptive faculties, the latent powers of thought, action, or control can be awakened, strengthened, or guided. Willingness is to be assumed (this is again of varying degree), but co-operation must be secured and to the point of active impulse and power for sustained action. Faith in the operator is most helpful also.

Frequently a masterful domination is sufficient to effect miraculous results. Many successful physicians employ this forceful suggestion with glowing success. Too often it fails for a variety of reasons, the chief of which is inadequate will-power in the subject and disinclination to change the state of indolent hypochondriacism usually present.

Before realizing the utility of hypnotism I, too, wrought a few miracles (among many failures), of which the following instance is a type: An elderly spinster, living at ease in the house of relatives dependent upon her income for support, became gradually paralyzed and had been for years bedridden. She presented a cheerful, well-nourished appearance, and I could find no evidence of serious derangement. My time was limited by train intervals, so after assuring her she was able to walk I cleared the large room of furniture to the farther end, seized her portly person in my arms and, accoutred as she was, carried her to the remotest corner and propped her up there on her legs. I then ordered her to walk back to her much esteemed and comfortable bed. Of course there were tears and "winged words," then an ineffectual effort, then a fall of the easy, sink-down sort common to hysteric cases. Next prayers for mercy, finally dignified rage, and a final and spectacular rush across to the desired haven. Again I placed her, this time struggling bravely, in the same place. Language high and fierce followed, but a second and better race was run. My third attempt nearly met with defeat, the lioness was roused, but ultimately success complete and permanent met my efforts.

This is direct and dominant suggestion, not always, of course, feasible or diplomatic, however efficacious. It shades off to many graduations and is in common use and of wide repute.

The mysterious modifications in the mind of mortal man wrought by artificially inducing drowsy states offer, apparently, the best means of reaching far back into the recesses of the consciousness and readjusting the machinery through which thought and action is initiated and carried on. Where the processes have suffered disabling derangements (providing the structural damage is not too great as well) most gratifying and surprising repair can oftentimes be accomplished. If by the same token evil direction can be given to wholesome but en-

tangled forces, so much the more is it necessary to confine such spiritual control in the hands of responsible and skilful guides.

The possibilities of relief through hypnotic suggestion may be enumerated to consist in the restoration of disturbed or depraved function; the removal of false impressions upon the consciousness (themselves constituting grave disabilities, or again these may complicate disordered structures); the correction of bad appetites or tendencies; the restoration of self-control and the relief of painful states. It is also valuable as a means of differential diagnosis. This is perhaps its largest field.

Who are those most readily influenced by hypnotic suggestion? The impression has gone abroad that hysterical folk of unstable nervous balance are more susceptible. This is not my experience. A fundamental requisite in securing hypnotic drowsiness is a capability to obey and to fix the attention. Nevertheless, it is among those of unstable nervous equilibrium that loss of functional control is most common, hence clinically our experience is likely to lie chiefly among these. Wherever there is long-protracted ill-health there comes impairment in other organs besides those directly affected, and these often suffer serious derangement. It is a matter of practical importance to bear in mind, when estimating how much of good can be expected in a given case, that even though there is a basis of structural damage so much of relief can be secured by eliminating these complicating physical factors that results will amply justify our best endeavors. For instance, I had a case of torticollis which, along with domestic troubles, ovarian disease, and the dismal array of invalid habits, wrought a miserable picture. The case was referred to me by the gynecologist who removed the diseased ovaries, and I was able in time to dissipate the neurotic symptoms, leaving a moderate and endurable wry-neck and a fairly healthy and happy woman.

I do not believe so much could have been accomplished without repeated hypnotizations. Certainly, ten years of opportunity had been employed by eighteen prominent physicians of this city and elsewhere to little purpose.

Again, insomnia frequently adds distress to the victims of depleted health due to grave conditions. The lever of hypnotic suggestion, coupled with compulsory sleep and the direct admonition to sleep constantly for eight hours, has frequently, in my hands, put away the source of suffering and impediment to gain in nervous vigor. Oftentimes the lack of sleep is not realized to be the chief source of exhaustion among more obvious ills. When this is cured, as can be done better by this means than by drugs, one opportunity of gain is immediately opened. Other restorations of function are thus secured. Hys-

terical paralyses, only too common, are repeatedly overlooked by the best, at least the most prominent, neurologists. To relate my experience in this direction is not expedient, in print at any rate. It is quite true these hysterical paralyses, like other disabilities due to the protean malady, are prone to relapses. They are worth striving with, however. If by this means a breadwinner is restored to his family it is certainly something gained. Such has been my privilege several times. One case required daily *séances* of half an hour or more for six weeks before it yielded, but the success was complete at last.

In the removal of false impressions upon the consciousness the field of hypnotic suggestion is enormous, and needs only a reference. Fixed ideas, morbid impulses, and inertness of initiative are only too common in the practice of most physicians, and will not down at their bidding, and the wise men often fail to correct these, though they rarely mention the fact. Then the patient is liable to go from hand to hand seeking relief.

Protracted ill-health inevitably produces misconception of self and its needs, duties, and privileges. The springs of action from frequent interferences discharge irregularly, and central agencies, volition, and normal inhibition become palsied or dead, and from them arise a wide array of morbid fears, impulses, or apathetic states.

Again, a most potent adversary to the well-intentioned physician is the malignant damage wrought upon the volition of the patient by previous half-hearted, ill-judged, or, at any rate, unsuccessful efforts at repair on the part of physicians. Each failure furnishes the patient with a lot of rubbishy half-knowledge which is misappropriated and misapplied to his own case, breeding suspicion and blinding him to the value of the fundamental principles of medicine. To urge upon such sufferers "to use their own will-power," unless accompanied by the nicest explanations and boundless sympathetic help, usually ends in frantic strains and helpless agitation, and results in worse than failure. Here, to wipe out all these irritating mists by rendering the mind blank for an hour or two a day and in these receptive silent periods to succinctly and clearly define what must be done, is not only an intense relief, but a great economy of time and strength. And it is the element of economy served by hypnotism rather than by direct suggestion which I beg to keep in mind. Other measures may serve, but at much greater length of time and suffering.

The correction of bad habits, vitiated appetites, and evil tendencies is likewise a large field and peculiarly the province of hypnotic suggestion. Instances of these defects, which have resisted all rational measures and ample, well-directed persuasion, will sometimes succumb to the hypnotic influence. While it is true that there may be

those able to hold the attention and sway the impulses directly, many instances are to be found where individual co-operation is too weak or other causes prevent, and these are vastly more amenable to this agency. Who, for instance, can by the subtlest argument and tenderest sympathy induce a spasmodic tic to cease? Under hypnotism this is often accomplished, though on confirmed old cases it is not so easy. Stammering is occasionally amenable to this treatment in cases free from mechanical or mental defects. A friend of mine, himself a professor of psychology, was thus cured by Dr. Osgood of this exasperating speech defect.

Exaggerated appetites, as for alcohol, tobacco, opium, or other narcotic drugs, are thus frequently controlled. To those who sneer at the value claimed for hypnotic suggestion I would reply that if no other one thing were capable of accomplishment through hypnotism but this one thing, if only a fair proportion of drunkenness, controllable in no other way, could be thus redeemed, it should be joyfully extolled. And much evidence is growing that great results are possible and infinitely more can be done in this department. I enjoy the greatest satisfaction in contemplating certain cases of valued friends thus rescued from alcohol and morphine, comforting me in many and varied defeats. Alcoholics are particularly susceptible to hypnotic influence and usually more than willing to co-operate.

The mental depression, the disgust with themselves, or it may be the apathy or discouragement, and, above all, the thirst for drink, pass quickly in my experience and that of a number of reputable observers. These states usually return in varying degree, but generally in lessened persistence and force. True dipsomania, or an inherited drink habit, is of course a far more discouraging matter. Relapses will occur, often serious ones, and the subject needs to be kept under patient observation for lengthening periods, perhaps always. My cases usually do so voluntarily, and the matter is too important to omit any reasonable precaution.

For the relief of many painful states, headache most commonly, neuralgia of various lesser sorts, even for the results of injuries at times, it is a matter of common knowledge that normal suggestion does much if judiciously applied. This failing and before drugs are used, especially the hurtful ones, and few are altogether free from this possibility, hypnotic suggestion is curiously effective. It is frequently possible to so deaden sensibility that minor operations can be painlessly performed, notably by dentists, and also the process of parturition rendered more comfortable.

In brief, it may be claimed that if any physician will scan his *clientèle* he will find some, it may be many, folk who suffer from various

disturbances of a most distressing kind, which have resisted excellent care and treatment, and have became a despair to himself and them. A fair proportion of these can be relieved or cured by hypnotic suggestion.

A SUCCESSFUL IRIDOCYSTECTOMY.[1]

By G. Oram Ring, A.M., M.D.,

PHILADELPHIA.

Ophthalmic Surgeon to the Episcopal and Samaritan Hospitals; Fellow of the College of Physicians of Philadelphia.

By reason of our modern antiseptic methods and skilful technique the ophthalmic surgeon comparatively rarely has presented to him the problem of lifting the veil from an eye that has been operated upon unsuccessfully for hard cataract.

In a series of about seventy extractions I have been fortunate in encountering but one case of iridocyclitis with subsequent partial closure of pupillary space. Hence the completion of the operative procedure by an occasional section of an opaque posterior capsule has been a comparatively simple matter. The case I am about to report was not one of my own extractions.

The patient was a male, 75 years of age, fairly well preserved in health, without organic kidney lesions, with a history of obscuration of vision in right eye, dating back about three years previous to his being referred to me, in March, 1898. The lens was thoroughly opaque.

Light perception and projection were good, the anterior chamber narrow, and the diameter of the cornea barely ten millimetres.

The lenticular haze of the fellow-eye was sufficiently marked to prevent a detailed study of the fundus, but a few small vitreous opacities were observed. Tension was normal.

I advised a preliminary iridectomy in the right eye, and performed it early in March.

There was only a very slight reaction, and the eye was quiet at the end of a week, with a typical key-hole iridectomy, the edges of the coloboma being entirely free.

I had promised the patient that I would probably extract the lens in about four weeks following the date of the iridectomy.

[1] Presented to the Section of Ophthalmology, College of Physicians of Philadelphia, February, 1899.

At the time appointed, however, I was in bed, indulging in a mad struggle with multitudes of the typhoid bacilli, and the patient consulted another surgeon, who has kindly furnished me the following report of the operation:

"After making the initial incision and opening the capsule, on expressing the lens he seemed to suffer considerably from pain, and made a number of attempts at straining, even when I was not touching the eyeball. I removed as much lens matter as possible, leaving some cortex behind, not attempting to remove it, for fear his continued efforts at straining might result in a rupture of the zonula or posterior capsule, and consequent loss of vitreous.

"For a few days after the operation the eye was inflamed, but with no marked ciliary tenderness or pain, and no change in the color of the iris.

"Thinking that the cortex, which was continually exuding from the wound, was responsible for this irritable condition of the eye, I opened the wound with a spatula, in hope of getting the remains of the lens matter away, but was not successful. Atropine was used constantly with boric wash.

"The injection gradually disappeared, leaving considerable cortex in pupillary space, with pupil slightly smaller than at the time of operation. This diminution in the size of the pupil continued until there was very little left, as was the condition when you saw it."

In October of the present year, the patient again consulted me, showing the result of an iridocyclitis, with entire closure of the pupil by a yellowish exudate or pseudo-membrane, in the formation of which the iris fibres had been well drawn up towards the upper periphery of the cornea.

Light perception and projection were still acknowledged, the latter, however, with very considerable question.

The case now became one of extreme interest and importance, and after considering the various operative procedures that promised relief, I ultimately decided upon iridocystectomy.

In his classical description of the operations usually performed in eye surgery, in Vol. iii of the monumental work edited by Drs. Norris and Oliver, Dr. Hermann Knapp speaks thus of iridocystectomy:

"It is the operation which, from the beginning of my practice until to-day, I have used as the chief method for making a new pupil when iridocyclitis or iridocapsulitis, after cataract operations or traumatisms, had closed the old."

In the small percentage of cases in which such an operation is indicated, Dr. Knapp has found more satisfaction in this method than in iridotomy. Dr. Knapp's description is as follows:

"Under cocaine anesthesia, a Beer cataract-knife pierces the cornea, about three or four millimetres above the lower corneal margin, opposite the scar from the extraction, and transfixes the iris or pupillary pseudo-membrane by an opening three or four millimetres long. The knife is withdrawn. With a blunt hook the lower lip of the iris wound is seized, drawn out of the eye, and abscised close to the cornea, and the eye bandaged. There are scarcely any accidents worth mentioning. Healing is usually prompt and yields most surprisingly good results."

Should suppuration follow the operation, it is due, in Dr. Knapp's judgment, to the waking up of pyogenic germs, which had entered the eye at the first operation, and lain dormant in the inflammatory products of the iris and capsule. "It is possible, however, that infected material may be carried into the eye by prolapse of the vitreous, which is not infrequent during the operation."

It will be noted in the description which I have quoted that the exact relation which the corneal and iris incisions shall bear to each other is not definitely expressed.

If the incision in the iris were made in the same relative position as the incision in the cornea, it was feared by myself and several other members of the section, with whom I discussed the matter, that an anterior synechia, or the linear corneal scar, would likely interfere with the effect of the operation. The very satisfactory letter which Dr. Knapp has kindly sent me clearly disposes of any such criticism:

"New York, December 28, 1898.

"Dear Dr. Ring,—In iridocystectomy the best part of the cornea is to be chosen as the place of the artificial pupil, and the incision of the cornea according to the least traction on the iris required. The corneal incision should be large enough to let the hook charged with the iris or the pseudo-membrane of capsule and inflammatory products come out readily. There are no more synechiæ or opacities of the cornea to be expected from this operation than from an ordinary iridectomy. The wound has to be cleared from possible

Fig. 1.—*a*, Iris-capsule incision. *b*, Corneal incision.

Fig. 2.—Aspect of the eyes after operation.

incarcerations of iris in the corners of the wound. I have no experience with the method of using a Graefe knife, making a counter-puncture and an incision in the iris-capsule diaphragm and dilatation with a double hook. In many cases good pupils can be obtained with an iridotomy by a Graefe knife, or by a Wecker forceps-scissors, of which Esberg and Schweigger have made useful modifications.

"*If you make an iridocystectomy, place the corneal incision a small distance away from the artificial pupil.* Exsect a sufficient piece of iris to secure a medium-sized natural pupil, and stroke the root of the iris back and out of the corneal wound into the anterior chamber.

"Yours truly,

"H. KNAPP."

A horizontal incision was made with Beer's cataract-knife, two millimetres from the lower corneal margin, and from five to six millimetres in length. After entering the anterior chamber the handle was depressed and the point of the knife carried to the portion of the iris just under the yellowish-white exudate or pseudo-membrane, and the iris transfixed by a horizontal opening, four millimetres in extent. The iris and pseudo-membrane were then caught with a Tirrel hook and a clean iridectomy made down and slightly in.

As there was considerable pseudo-membrane posterior to the coloboma thus formed the hook was introduced a second time, and a portion of the pseudo-membrane exsected. The operation was performed under strict antisepsis; atropine was instilled at its close, the patient put to bed, and the resident instructed to use ice compresses in the event of reaction. Recovery was rapid and uneventful. When the dressing was removed, at the end of twenty-four hours, there was practically no reaction. The patient recognized my face at once, and counted fingers readily, and at the end of a week, with an appropriate lens, told the time on the dial of my watch with absolute accuracy.

At the end of about three weeks the distant vision, with the appropriate correction, was 20/LX, with some letters of 20/L. An operation that makes possible so gratifying a visual result in a series of cases ordinarily unpromising is surely worthy of very general adoption.

DISCUSSION OF DR. RING'S PAPER.

DR. RISLEY.—The author certainly reached a most fortunate result in the case which he has made the basis of his paper. Restoration of useful vision in case of closure of the coloboma after extraction by iridocyclitis is, I think, comparatively rare. This is to be anticipated from the very nature of the disease which has caused the closure of the pupil and its upward traction. Left to themselves these eyes are subject to steadily progressive disease, which sooner or later leads to degeneration of the vitreous and atrophy of the ball. The fortunate result in Dr. Ring's case suggests the advisability of the artificial pupil in the hope that a restoration of communication between the vitreous and anterior chambers may arrest the degenerative processes. With this idea in mind an early operation would seem advisable. I have often been disappointed in restoring vision, however, by the pres-

ence of dense masses of exudate back of the iris. Dr. Ring found this exudate, but was fortunate in being able to remove it so readily. The gray exudate has, in my experience, usually been so abundant and so strongly attached to the ciliary region that the procedure employed in this case, to have been successful in withdrawing it, must have caused dangerous traction upon the ciliary body.

I have never performed the very ingenious operation so clearly described by the writer of the paper, but have employed other procedures in different cases. In one case, where the lines of traction appeared to be mainly lateral, a narrow cataract-knife was entered at the inner side of the chamber, and carried through the exudate at the lower border of the coloboma, which was drawn well up to the upper border of the cornea, and then carried the point of the knife downward, cutting through the rim of the pupil, and making a free vertical slit in the iris. The result was a triangular pupil, which remained open, but the dense exudate behind the iris impaired the visual results. It is not always necessary to take out a piece of the iris in order to secure a pupil. In one case I entered a cataract-knife just below the line of the original incision and, carrying the point downward and well to one side of the anterior chamber, perforated the iris, and divided the fibres horizontally across the line of upward traction of the iris fibres. The immediate result was a horizontally oval pupil, which after a few days became nearly round.

I prefer entering the anterior chamber from above, as it does not require the rotation of the knife in the wound, as when entered from the side, as suggested by Dr. Noyes, and, furthermore, the mechanical advantages are better for perforating and dividing the iris fibre.

Dr. de Schweinitz said that among 194 operations for cataract of various kinds iridocyclitis with drawing up of the iris and closure of the coloboma by a web-like membrane had occurred four times. First in the left eye of a woman aged 70, from whose right eye a cataract had been extracted, resulting in normal vision; simple extraction; prolapse of iris on fourth day; iridocyclitis; usual medicinal treatment; eye white and quiet six months later; vision equals counting fingers at one metre; operative interference positively declined. Second, a man aged 60, a chronic alcoholic with chronic conjunctivitis; combined extraction; capsule opened with capsule-forceps; typical iridocyclitis, which was yielding to treatment when patient, at the end of fourth week, eloped from hospital; last recorded vision, five weeks later, 10/CC, a vision which has no doubt deteriorated, for patient was not seen again. From his right eye a cataract had been extracted by another surgeon years before, and the eye lost by iridocyclitis. Third, a woman aged 65, with chronic conjunctivitis; combined extraction;

on the fourth day, after traumatism in the night, wound found open and blood in anterior chamber; typical iridocyclitis; ten weeks later, eye quiet; vision with plus 12 equals 4/CL; operation declined. Extraction of cataract from the opposite eye, two years before, by another surgeon, had also resulted in the loss of the eye from iridocyclitis. Fourth, a colored woman, aged 50, cataract complicated with high myopia and capsulitis; combined and difficult extraction; moderate iritis, with thickened web in coloboma; vision with plus 10 equals 3/CL. Two months later modified irido-capsulectomy upward (not Knapp's operation); good coloboma remaining for about a week, and nearly doubling of the previous vision, then gradual contraction of the opening, succeeded by an attack of iridocyclitis of stubborn character, slowly yielding to medical treatment. Vision one year later; counting fingers at fifty centimetres; eye white and quiet; normal light projection.

Dr. de Schweinitz had seen one case of sympathetic ophthalmia, in the practice of a colleague, follow excision of the thickened membrane after iridocyclitis. He had performed several operations on cases of iridocyclitis which had come to him in the wards of the Philadelphia Hospital after cataract extraction elsewhere, and had always employed either Agnew's operation or de Wecker's iridotomy. In some cases there had been decided visual improvement, but none had reached so good a result as that reported by Dr. Ring.

Dr. Harlan had fairly successful results by cutting out a triangular piece of iris and underlying membrane by means of de Wecker's iridotomy scissors.

Pathogeny of Enteroptosis.

Rosengart (*Rev. Gén. de Path. Int.*, December 5, 1898) has been brought, by the researches which he has made, to the opinion that enteroptosis is a returning of the abdominal viscera to something like the positions which they occupied in fetal life. All the causes which depress the diaphragm, as well as all of those which relax the abdominal wall, tend to push down the liver to its fetal position. Thus gastroptosis is found in individuals with curvature of the spine, or long, narrow thoraces which have ossified too soon, as well as in those who suffer from emphysema or phthisis. He also blames the corset in women and tight belts in men. With the sinking of the liver the stomach also sinks, especially its pyloric end, and the ascending colon being compressed, exerts its action on the right kidney. Hence, the right kidney is frequently loosened, while the left is seldom affected.—*Medical News.*

THE INFLUENCE OF TURBINAL HYPERTROPHY UPON THE PHARYNX.

By Lewis S. Somers, M.D.,

PHILADELPHIA.

The intimate relationship, both anatomic and physiologic, existing between the nasal chambers and pharynx is becoming more evident as the important value of the former, as directly related to the respiratory tract in its entirety, becomes better appreciated. And, as a result of the clearer comprehension of this relation, we are in a position to see that, with the nasal chambers, and especially the turbinal structures, in an approximately normal condition as regards their anatomic integrity, it becomes almost impossible for chronic non-specific changes in the pharyngeal tissues to take place, so dependent is the latter for a continuance of its normal condition upon a healthy state of the former.

Varied morphological changes of the intranasal tissues may influence in a deleterious manner the pharyngeal structures, but most marked in its etiologic relationship is nasal obstruction due to hyperplasia of the turbinal cavernous tissue. A majority of pharyngeal affections are, undoubtedly, related to structural changes interfering with the respiratory function of the nares, and this is seen by the frequency with which pharyngitis is often uninfluenced by local applications, but immediately responds when the nasal obstruction is removed; the sole indication for treatment in many of these cases being to remedy the nasal obstruction. More than this, the form of obstruction is an important factor, the mere interference with nasal respiration being but a part of the chain of events, other changes in the correlative tissues also being concerned. This is shown in total occlusion of the nares from deflected septum, polypoid degenerations, etc., of long standing, in which the pharyngeal tissues give little or no evidence of inflammatory changes, while in true hyperplasia of the turbinals, as will be seen later on, a very large proportion of cases present marked evidences of pharyngeal involvement.

Nasal obstruction, also, is responsible for unhealthy secretions, which seriously interfere with the proper function of the glandules of the pharynx, resulting ultimately in pathological alteration of their structure. We are here concerned only with the respiratory portion of the nares and the effect of hypertrophy of the turbinal tissue (to such an extent as to prevent, for longer or shorter periods, its proper function) upon the pharyngeal mucosa.

In order to ascertain, as far as possible, this relation 250 cases were studied, which form the basis of this communication. In all these both inferior and frequently the middle turbinated bodies were hypertrophied, obstructing, to a great extent, the passage of air through the nasal chambers. In addition to the hypertrophy, a certain degree of vasomotor relaxation was observed, this disappearing temporarily, when cocaine was applied; but a reduction in the dimensions of the parts in no way being affected by the drug in the true hyperplasia, as in many of the cases the turbinal bones themselves were enlarged, but not in any instance was ethmoid suppuration present. The age of the individuals extended almost over the entire scale of years, but, like the sex, presented no feature of value. The pharyngeal changes dependent upon the nasal obstruction may be divided into five classes, four of which represent the ordinary range of morbid changes commonly observed. In 132 of the cases the pharynx was sclerotic (granular); in seventy-two atrophy was the most prominent feature; twenty-two were congested or showed a low grade of inflammation; the tissues, and especially the lymphoid elements, were hypertrophied in nineteen; while in the remaining five cases no abnormal changes were present.

Referring briefly to the well-known function of the nares as related to this subject, the triple power of moistening, warming, and filtering the inspired air mainly falls upon the inferior and a portion of the middle turbinals, and with these enlarged, closing the respiratory channels, these important functions must necessarily be partially or totally abolished. Clinical observation has clearly shown that this preparation of the respired air is dependent upon the functional integrity of the intranasal tissues, and that the buccal and pharygeal mucosa is incompetent to perform this work. Further, it must be borne in mind that the mucous membrane of the pharynx and nose is continuous, and varies only with the functions to be performed in different parts, being of the ciliated columnar variety in the respiratory areas, and flat in structure on the lower pharyngeal walls. As further bonds of correlation between these two portions of the upper respiratory tract are the nerves, blood-vessels, and especially the lymphatic chain, the latter forming a net-work superficially situated over the entire mucous surface of the nares, and terminating in two main trunks, which are in direct communication with the lymph-glands of the lateral pharyngeal walls, any morbid change of the nasal tissues interfering with the lymphatic system of this region being immediately appreciated by the pharyngeal tissues.

The vascular relations may be conveniently divided into two groups, of which the internal maxillary artery and its communicating branches form the first, while the second, which is here most important,

is the cavernous tissue principally composing the turbinal bodies, but with isolated areas scattered over the nasal chambers. The intimate connection of the nerves with inosculating filaments from the sympathetic is of importance, and, to a considerable extent, may be a potent factor in producing some of the changes, especially the marked degree of atrophy of the pharynx wall, seen in occasional cases of long-standing turbinal hypertrophy.

Ingals, in Burnett's "System," remarks that probably the most common cause of pharyngeal inflammation is obstruction to nasal respiration by hypertrophy of the turbinated bodies, giving rise to mouth-breathing. In these cases mouth-breathing is of course the most prominent factor in the etiology of the pharyngeal alterations, but more than this is concerned, as in nasal obstruction, existing for long periods of time and resulting, as before said, from multiple polypi, etc., the pharynx in no degree undergoes the same amount of morbid change as occurs from turbinal hyperplasia. Further, in what may be called the early stage of hypertrophy of the turbinals, where intermittent vasomotor congestion takes place, with unilateral or bilateral obstruction, pharyngeal changes are more pronounced, even with intermittent mouth-breathing, than occurs as a result of other forms of nasal occlusion.

The explanation of the pharyngeal changes must be sought further, although mouth-breathing does play the most important *rôle* in the mechanism, and in the intimate relation between varied portions of the respiratory tract we are possibly able to further elucidate this question. As a result of vasomotor relaxation of the cavernous tissue venous stasis takes place, the sinus walls, while at first only transiently relaxed, soon become so permanently, increased nutrition is supplied by the augmented volume of blood, and hyperplasia results; the sinus walls become dilated and paretic and ultimately the turbinal bodies occlude the nasal chambers. In addition to mouth-breathing trophic and capillary alterations, preceded by pharyngeal congestion, results, and sclerosis and atrophy follow. It can readily be seen that in a very large proportion of individuals with marked turbinal hypertrophy pharyngeal alterations are an ultimate consequence.

It may be assumed, without granting too much, that the first deleterious effect upon the structures of the pharynx is congestion and inflammation, and unless the nasal condition be restored to normal, this is followed by hyperplasia of the lymphoid and connective tissue structures, the larger proportionate amount of blood going to the glands, determining their increase in size, to the detriment of the intercellular connective tissue, with the production of sclerotic changes, and finally from the added irritation of the parts from mouth-breathing, atrophy

of the mucosa results. The drainage of the nasal chambers is seriously interfered with, should the structural relation of the parts become altered; the resultant secretions accumulate and undergo chemic and microbic change, while a considerable amount of perverted secretion passes into the naso-pharynx, and acting as an irritant, produces inflammation.

Mouth-breathing, as before mentioned, is a constant factor, and as a result of the inspiration of air, without sufficient preparation, the pharyngeal mucosa suffers from irritating particles or from temperature-changes, and finally alteration may occur from rarefaction in the naso-pharyngeal vault, as a result of imperfect nasal ventilation. The pharyngeal secretions become inadequate to moisten the inspired air and are rapidly absorbed, producing dryness of the surface; the mucus becoming thick and tenacious, adhering to the walls and preventing to a considerable extent further secretion.

MEMORANDUM.

JAUNDICE AFTER CHLOROFORM.—A REPORT OF TWO CASES.

In the article on "Anesthesia" in Dennis's "System of Surgery," it is affirmed that "such cases must be of exceeding rarity. I have myself never met with them in literature, and Murchison states that, after careful examination, he has never been able to find a record of a case." This has led me to report two cases that I have seen.

One was a plump and healthy girl of about 16 years, whom I saw operated upon in Professor Donald Maclean's clinic, in the University of Michigan, in 1879–80. The operation was for harelip; and when she was exhibited, a week later, she was as yellow as a lemon, and the wound had failed to unite. The jaundice was referred to the narcosis. Chloroform was used.

The next case occurred in my clinic in the Brainerd Hospital, in Alma, Mich., after an operation for appendicitis, on November 20, 1898. The jaundice came on gradually and was deep in five days. I got primary union throughout the wound, and removed the stitches at the end of the first week; but later necrosis took place between the

fat and muscles, and a large slough came out about three or four weeks after the operation. The patient recovered. The anesthetic was chloroform.

I. N. Brainerd, M.D., Alma, Mich.

ALUMNI NOTES.

A Gift to the University Library.

Dr. William Pepper has presented a collection of 500 medical books from the library of his father, the late Dr. William Pepper, to the University Library.

Lecturer on Dietetics of the Sick.

Dr. B. Franklin Stahl, of the Class of '87, has been elected by the Trustees of the University lecturer on dietetics of the sick.

A Botanical Laboratory at Sea Isle City.

The botanical department of the University is contemplating building a laboratory on the banks of Corson's Inlet, near Sea Isle City, N. J. The building will be kept open the entire year, and classes will be taken down each week for study. During the summer a house-boat will be used in exploring the shores of the inlet for botanical specimens.

Army and Navy Officers.

Dr. Edward O. Shakespeare, who was appointed brigade surgeon at the beginning of the war with Spain, has been honorably discharged by the Secretary of War.

Assistant-Surgeon William H. Bell, of the Class of '97, has been ordered to the "Vixen," and will serve in the Philippines.

Dr. John Mitchell, of the Class of '84, is serving with the Ninth United States Volunteer Infantry, in Cuba, as surgeon, with the rank of major.

Colonel Harry C. Egbert, of the Class of '56 (Col.), who went to the Philippines in command of the Twenty-second United States Infantry January 22, 1899, was killed on March 26, in leading a bayonet charge near Malabon.

A Farewell Dinner to Dr. Guiteras.

The Guiteras Medical Society gave a farewell dinner, on April 3, at the Aldine Hotel, to Dr. John Guiteras. Dr. Horatio C. Wood was toastmaster, and toasts were responded to by Dr. John H. Musser, Dr. J. M. Swan, Dr. A. E. Taylor, Dr. David Riesman, Dr. E. W. Holmes, Dr. Alfred Hand, Jr., and Dr. Frank Massey.

Appointment.

Dr. J. M. Baldy has been appointed by Secretary of State Hay a delegate to represent the United States at the next meeting of the International Congress of Gynecology and Obstetrics, to be held in Amsterdam, August 9 to 12, inclusive.

Necrology.

Dr. James McAlpin Sommerville died in Philadelphia on April 9, 1899. Dr. Sommerville was born in Clarksburg, Va., in 1825, and was graduated from the medical department of the University of Pennsylvania in 1857. From that time until about a year ago he practised medicine in Philadelphia. Besides being held in high repute as a physician, Dr. Sommerville was well known for his work in art and natural science.

Dr. Thomas Wister Flanner died in Philadelphia on April 16, 1899. Dr. Flanner was a native of North Carolina, and was graduated from the University of Pennsylvania in 1840. At the outbreak of the civil war he was practising in Springfield, Ill., and in response to a call for volunteers he joined a regiment, and soon after was commissioned with the rank of captain. He served on the staff of Major William K. Strong for nearly a year, and resigned at the solicitation of Admiral Porter to accept command of the gunboat "New Era."

On December 23, 1862, Dr. Flanner proceeded with the gunboat to join the blockading fleet in the Mississippi River. He took part in the bombardment of Arkansas Post, and, although wounded several times, refused to leave the deck until the Post surrendered. He was ordered back to Cairo, Ill., with thirteen Confederate officers, who had been made prisoners, and, while on the way, was attacked by a company of Confederate cavalrymen in a narrow part of the river, who made a desperate attempt to kill the boat's pilot and rescue the prisoners. In this engagement Dr. Flanner was again wounded. A bullet struck him in the right temple, and flying splinters damaged the sight of both eyes. Soon after the wounds which he had received resulted in physical disabilities and total blindness, and he was forced to retire from the service.

EDITORIAL.

MYELOPATHIC ALBUMOSURIA.

Recent reports in several European journals of cases in which albumosuria was associated with multiple myelomata of bones have served to call attention once more to the possible diagnostic value of albumose in the urine, under certain conditions. Fifty years ago Bence Jones described a case of osteomalacia in which he found albumose in the urine; but this fact attracted but little attention until 1889, when Kahler suggested a mutual relation between albumosuria and the development of multiple new growths in the bones. A trace of albumose is frequently found in the urine in infectious and suppurative disease, and its detection in these cases has little or no significance, but recent studies indicate that the appearance of large quantities of albumose in the urine in connection with fragility of the bones is a symptom of considerable diagnostic value.

In April, 1898, Bradshaw (*Lancet*, April 30, 1898) read before the Royal Medical and Chirurgical Society of London an account of a case in which for more than a year there had been large quantities of albumose in the urine, and for several months before death indications of softening and fragility of the ribs, sternum, and vertebræ. The diagnosis was multiple myelomata, a condition which had been found at the necropsy of former cases of albumosuria, but which had never before been recognized during life. At a meeting of the same society, held on March 14, 1899 (*British Medical Journal*, March 18, 1899), Bradshaw and Warrington reported on the post-mortem findings in this case. The patient died in August, 1898, and the autopsy confirmed the diagnosis. The affected bones were brittle, their deeper parts being occupied by a soft, round-celled mass, and the osseous tissue reduced to a mere shell. In its clinical history and morbid anatomy this case differed materially from those of osteomalacia, but it corresponded with the description of former cases of multiple myelomata. According to Bradshaw and Warrington only six well-attested cases of albumosuria with bone-disease had been published when Bradshaw read his first paper. In some of them the bone-disease had been altogether overlooked during life, and in the others it had been considered to be osteomalacia. These writers are of the

opinion that the cases of multiple myelomata with albumosuria are of an entirely different nature from those in which it does not occur, and suggests the term "myelopathic albumosuria" for cases of albumosuria with new formations in the marrow.

The first case in this country in which the occurrence of albumosuria led to a correct diagnosis of the bone affection was reported by Reginald H. Fitz at the meeting of the Association of American Physicians in 1898. According to de Holstein, who discusses the subject under the title of "Albumosuria as a Sign of Primary Multiple Sarcomata of the Bones," in the *Semaine Médicale* for March 15, 1899, a correct diagnosis was also made in a case reported by Bouchstab and Chapochnikov.

Ellinger (*Deutsche Archiv für klinische Medicin*, and *British Medical Journal*, March 25, 1899) records the case of a man, aged 45, who was admitted to the Königsberg Clinic with slight jaundice, albuminuria, anemia, and fever. The fever had probably been present for six weeks, and remitted or intermitted in the morning. About four weeks after admission albumose appeared in the urine for the first time. The anemia increased, and was accompanied by edema, hemoptysis, and retinal hemorrhages. Microscopic examination of the blood did not show the typical appearances of pernicious anemia. The man died about seven weeks after admission. At the necropsy the medullary portions of the ribs, sternum, and vertebræ were found to be the site of multiple lymphomatous tumors and diffuse lymphoid infiltration; the spleen was large and pulpy, the posterior columns of the spinal cord were degenerated. This case is particularly interesting on account of its close resemblance to pernicious anemia. Another case is reported by Senator in the *Berliner klinische Wochenschrift* for February 20, 1899, in which the albuminuria and anemia were associated with asthenic bulbar paralysis. At the necropsy multiple sarcomatosis of the ribs was discovered. The asthenic paralysis was attributed to the intense anemia produced by the disease. According to Senator, nervous symptoms have been described in several cases of multiple myelomata.

In conclusion, it may be stated that traces of albumose are often found in the urine in a great variety of febrile diseases, both infectious and suppurative. That it may be detected by adding nitric acid to the urine, the white precipitate which is thus found disappearing on boiling and reappearing on cooling. That marked albumosuria in association with fragility of the bones or the symptoms of severe anemia is highly suggestive of multiple myelomata; that the albumosuria may not appear until the later stages of multiple myelomata; that it is not an invariable accompaniment of the disease, it having been present

in but six of sixteen cases collected by Bradshaw, and that in exceptional cases the albumose may be present in the urine in such liberal quantities as to be precipitated spontaneously. That lymphomatous growths elsewhere than in the bones do not give rise to albumosuria. That it is still an open question whether this kind of albumosuria is peculiar to multiple myelomata of the bones, or whether it is also present in association with other forms of bone-disease.

FOREIGN BODIES IN THE VERMIFORM APPENDIX.

An interesting study of the relative frequency of foreign bodies in the vermiform appendix is presented by Dr. John F. Mitchell in the *Johns Hopkins Hospital Bulletin* for January, February, and March, 1899. Of 1400 cases of appendicitis collected from various sources in the last ten years he found only 7 per cent. of true foreign bodies; while in 700 of the cases, in which a definite statement was made as to the nature of the foreign body, there were 45 per cent. of fecal concretions. In 250 cases of appendicitis in the Johns Hopkins Hospital, in the past ten years, there was only one foreign body,—a segment of tapeworm. Osler, in ten years' experience in Montreal, found foreign bodies only twice; in one instance five apple-pips, and in another eight snipe-shot. The most common foreign bodies have been gall-stones, round worms, spicules of bone, bristles, and pins.

Pins have been especially frequent. Mitchell has collected twenty-eight cases in which a pin was found in the appendix at operation or autopsy, together with two instances in which a pin had perforated the cecum. It seems remarkable that in no single case was there any knowledge of a pin having been swallowed. Contrary to what might be expected, they occurred more frequently in males than in females (males, seventeen; females, nine). The resulting appendicitis was of a very variable type, in some cases the symptoms were mild, leading to chronic appendicitis, with recurrent attacks, or with long-continued pain, and, perhaps, finally ending in an abscess. In the majority of cases, however, there was rapid perforation and abscess-formation following the first appearance of symptoms.

The pin entered the appendix by its head or point, and, except in one or two instances, where it lay directly across the lumen, it was straight, with its long axis parallel to that of the appendix. In seven of the twenty-eight cases the appendicitis was associated with abscess of the liver.

The author concludes from his investigations that foreign bodies at one time thought essential in appendicitis are now known to play a much smaller *rôle* than that formerly accredited to them; and fecal concretions are much more apt to be present as an exciting cause. Foreign bodies of light weight, like grape-seeds and cherry-stones, so popularly assigned as the cause of appendicitis, and against which we are forever being warned, are in reality exceptional, and their frequency is much over-estimated on account of the close resemblance of fecal concretions and the lack of careful examination of the bodies described.

The Ocular Evidence of Hysteria.

Wood (*American Journal of the Medical Sciences*) concludes his paper on this subject as follows: "It must not be forgotten that just as hysteria stimulates most organic lesions, it may also be present with them. Patrick has, among others, recently emphasized this important fact, and has reported cases illustrative of it. The eye is no exception to this rule, but fortunately organic alterations in the ocular structures, as examined by the ophthalmoscope, perimeter, etc., usually speak for themselves, and present characters entirely unlike those of a purely functional affection. In conclusion: (1) Most cases of hysteria present well-marked, easily detected eye-signs and symptoms. (2) A few ocular symptoms, such as reversal of the relation of the color-fields and the field for white, the tonic form of blepharospasm, spasm of accommodation and convergence, and pseudoparalytic ptosis, may be regarded as pathognomonic of hysteria. (3) Defects of vision (in the absence of refractive errors, accommodative anomalies, and fundus lesions) are, generally speaking, hysterical if accompanied by photophobia and any form of blepharospasm. (4) No examination of a patient for hysteria should be regarded as complete without considering the condition of his ocular apparatus. (5) Where there is no conclusive external evidence of the neurosis present, the perimeter should be carefully used, the range of accommodation should be noted, and the ophthalmoscope employed. (6) It should always be remembered that ocular hysteria is common in children and men. (7) Organic disease (traumatism especially) of the eye may accompany purely functional disturbances of that organ."

MEDICAL PROGRESS.

MEDICINE.

UNDER THE CHARGE OF

JAMES TYSON, M.D.,

ASSISTED BY

M. HOWARD FUSSELL, M.D., AND A. O. J. KELLY, M.D.

A Statistical Study of Locomotor Ataxia.

Thomas (*Journal of Nervous and Mental Diseases*) recently read a paper before the New York Neurological Society based on 111 cases of tabes, presenting more or less complete histories. Of this number, 106 were white persons and five negroes. The negroes represented a little more than 10 per cent. of the cases treated, so that the percentage of tabetics among negroes was less than half what it should be if the negroes were represented in proper proportion. Syphilis is considered by the majority of physicians to be the cause of tabes. The records show that while the negroes represented only 6.39 per cent. of the total number of males treated in a given time, they constituted 27.63 per cent. of the whole number of males treated for syphilis. In the dispensary the percentage of women suffering from tabes was small,—a little more than 9 per cent. Five female tabetics from the higher strata of society, which was contrary to the usual belief, were seen in the private wards. He had as yet seen no case of tabes in a negro woman. His statistics presented nothing of much interest regarding the age at which the disease develops. Most of the cases developed between 30 and 50 years, the youngest being 25 and the oldest 66 years. The duration of the disease could be determined with fair accuracy in 107 cases. In eleven it lasted ten years or more; in one the duration was thirty years. He had definite notes in ninety-five of the ninety-seven male cases. The percentage of cases in which syphilitic infection was certain was forty-two; the percentage of possible syphilitic cases was sixty-three. The author's conclusions regarding the relation of syphilis to tabes are: (1) In a large proportion of cases of tabes a history of syphilis can be obtained; (2) in a certain not inconsiderable number there is no history of venereal sore or other syphilitic manifestation; (3) in negroes tabes is relatively uncommon, whereas syphilis is very much more common in them than in white persons; (4) the partial immunity of women is greater than can be satisfactorily accounted for by the relative infrequency of syphilis among them.

This study seemed to show that syphilis is not the only factor in the development of tabes. The time elapsing between the syphilitic infection and the first symptom of tabes was determined in forty-seven cases. The shortest interval was two years, and the longer ones twenty-six, twenty-seven, thirty,

and a doubtful forty-two years. Pain occurred in fifty-seven as the initial symptom; ataxia in twenty-four; numbness of the extremities in six; paralysis of the bladder in five; nausea and vomiting and gastric crises in four. One patient complained that at first he had suffered pain extending from the penis to the rectum, and since this paper had been written he had seen another such case. Optic atrophy occurred in eleven; eye-muscle paralysis in thirty-three; Argyll-Robertson pupil in seventy; both pupils immovable to light but reacting to accommodation in fifty-seven cases. Of the cases showing optic atrophy, the ataxia was marked in two; slight in eight; absent in one. In two of the cases the Romberg symptom was marked in spite of blindness. In seventy-five cases in which the sexual power was noted, both power and desire were lost in thirty-eight, and in three of these was preceded by a marked increase; it was weakened in twenty-four; in one the power was lost, but the desire retained; in one both were increased; in ten both were normal. The muscular sense was disturbed in thirty-eight out of forty-four cases. Charcot's joints occurred typically in five, and there was suspicious enlargement in three others. In seven cases showing mental symptoms general paresis was suggested.

In conclusion, the writer said that too much weight should not be given such a statistical study as this, and it should not be used as a basis for too definite statements as to the relative frequency of any particular symptom.

Starr said that the statistics of one clinic should be studied in conjunction with those from other clinics. He had had the cases at the Vanderbilt Clinic tabulated up to March 15, 1897. To these 175 cases he had added 98 from private practice, making a total of 273 cases. The males were practically ten times more numerous than the females. The great preponderance of cases developed between the ages of 30 and 40, though twenty-one were over 50, and two were under 20. Syphilis was certainly present in 50 per cent., and if these were grouped with those in which syphilis was probable or doubtful, the total would represent 72 per cent. Of the 273 cases, twenty-seven had gastric crises; twenty-one had optic atrophy; five had Charcot's joints; five had ulcer of the foot. The most frequent symptom was the pain; next the ataxia; thirdly the bladder disturbance; fourthly numbness of the legs; fifthly girdle sensation, and sixthly ocular paralysis. The knee-jerks were absent in 246 cases; the Argyll-Robertson pupil was present in 184; the Romberg symptom was present in 229. Rectal crises, or severe pains in the perineum, were noted in one case.

Joseph Collins said that he had recently analyzed the symptoms of tabes occurring in 100 consecutive cases. Out of this number there had been four negroes. Two of his negro patients had been males, and two females. Out of the 100 cases, seven were women, and five of these had been under 30 years of age. Three of these women were actresses, all of them apparently syphilitic. He had made his analyses without any preconceived notions regarding them. There was a definite history of syphilis in sixty-three cases, and an indefinite one in seventeen, bringing the possible relationship of sexual infectious disorder to tabes up to 80 per cent. In his experience the bladder symptoms and numbness of the lower extremities had been the more common initial symptoms. Next to these came pain, and next in order the giving way of the legs. This latter symptom had been very commonly met with. Of the 100 cases of tabes seen in the last three years, rectal crises had not been observed in a single one. He was becoming more and more convinced that orthodox and thorough antisyphilitic treatment had not the slightest effect,

either in delaying the appearance of tabes or mitigating its severity, and this seemed to him a most potent argument against tabes being a parasyphilitic disease.

DANA said he had made an analysis of fifty private cases of tabes dorsalis that he had had under his care during the last two or three years. They represented, of course, a more intelligent class than those seen in the hospitals and clinics, and, consequently, the facts obtained from them were more trustworthy and valuable. Among those fifty there were forty-nine men and one woman. The ages at which the disease began were as follows: Under 20, none; between 21 and 30, inclusive, fifteen; between 31 to 40, inclusive, fifteen; between 41 to 50, inclusive, twenty; between 51 to 60, inclusive, three.

These figures showed that the critical period for the development of the disease was about the fortieth year of life, and, as a matter of fact, very few cases develop after that time, or, at least, after the forty-fifth year.

The number of cases in which there was an admitted venereal lesion of some kind was thirty-four, making a percentage of 68; and this was the highest percentage he could obtain, even with the most liberal interpretation.

Of those who had specific lesions, twenty, or about two-thirds, were treated with more or less vigor for syphilis, while the remainder received little or no treatment.

Studying these fifty cases independently, Dana found that among those who were carefully treated, after having received the initial lesion, the tabes developed twelve and a half years later. Among those who received no treatment at all, the disease developed, on an average, seventeen years later. He would not draw any other inference from this than that, in all probability, the treatment of the primary disease does not seem to postpone the development of the tabes.

Among his fifty cases, there were three with Charcot's joints, or 6 per cent., and these all occurred in the early stages of the disease. In three cases paresis subsequently developed.

Of the fifty cases there were seven who showed some evidence of a knee-jerk. In three the knee-jerk was present on one side only; in two it was slow or delayed, and in one it was present only on reinforcement. In two it was exaggerated. In one case the knee-jerk, after having been abolished for four or five years, returned, remained present for two years, and again disappeared.

Gastric crises were present in four cases. Dana had seen the gastric crisis, as the initial symptom, last for several years before the other symptoms of the malady were recognized.

Tachycardia was, in his experience, a quite frequent phenomenon in tabes dorsalis, but actual heart lesions were more rare.

Hemiplegia occurred in two cases, early in the disease. Paraplegia occurred in one case, also early in the disease; and in these cases restoration of function was nearly complete. Facial paralysis, a rather unusual phenomenon, occurred in one case.

As to the initial symptoms, that most complained of, when the patients were first seen by Dana, was pain, in fifteen cases; or both pain and ataxia in ten cases. Among other early symptoms were sensations of great weariness (three cases), rectal crisis (three cases), persistent insomnia, attacks of vertigo, impotence, optic atrophy (two cases). The Argyll-Robertson pupil should, perhaps, be classed among the most common of the early symptoms.

Remarks upon Phlegmasia Dolens in Typhoid Fever.

J. M. Da Costa (*Boston Medical and Surgical Journal*, March 23, 1899), at a clinical lecture recently given in the Pennsylvania Hospital, showed four cases, all soldiers, of double phlegmasia dolens in typhoid fever. Concerning this complication Dr. Da Costa spoke as follows:

Phlegmasia dolens in typhoid fever is not a common occurrence. Murchison, in his classical treatise, estimates it at 1 per cent. The general proportion of cases presenting the complication in this hospital is not more than 1 to 2 per cent. But among the 215 cases of typhoid fever in soldiers there were thirty cases in which it occurred, or almost 14 per cent., and of 135 cases that were under his direct control there were eighteen cases, making a proportion of 13⅓ per cent. Of these eighteen cases, in three the left leg, and in two the right leg, alone was affected; in thirteen the disorder showed itself in both legs, beginning, however, generally on the left side when not manifesting itself simultaneously in both. It is certainly remarkable that for some cause these soldiers have shown a much greater tendency to the complication of phlegmasia alba dolens in typhoid fever than is usually met with in private or in ordinary hospital practice. It may, perhaps, be attributed to the fact that the venous system in the legs had become relaxed and distended by marching, and that this predisposed them to the disease. Yet, excepting some from Porto Rico, these soldiers came from training camps, where marching, after all, was not excessive, though much more than men just from civil life were accustomed to. Nearly all the cases occurred in those in whom the typhoid fever had been very severe.

As regards the time of the appearance of this complication, it occurred mostly at the end of the fever or in early, sometimes in late, convalescence. This had been his experience for many years. He could not recall a single instance in which milk leg occurred at the height of the fever. It is therefore a disease of the close of the fever, or of convalescence. In one of the cases it came on at the fortieth day; in another on the fiftieth day; in another on the fifty-ninth day; in yet another it was not manifested until the ninth week of the disease. In two instances it appeared in a relapse, and in one of these before the relapse had terminated, and when the thermometer was still marking 103.8° F. It may be preceded by a number of other complications, as it was in one patient who had had a double parotid bubo, then erysipelas, and who finally had phlegmasia dolens of the right leg before convalescence set in.

The pathology is, he thought, a thrombosis, or clot, which forms in the vein, and which, it is true, may afterwards become complicated with a phlebitis or a periphlebitis; but this is not the first step in the morbid process. The affection comes on from the sluggish circulation of the infected blood. This is the explanation of the fact to which he has always directed attention, that you do not always have symptoms of inflammation of the vein, as evinced by pain, tenderness, and prominence of the vein. The disease is primarily, he believes, a venous thrombosis, and this is the cause of the swelling of the limb and of the other symptoms; the thrombus fills the vein, and obstructs the circulation. The pain in the limb is the result of the swelling; secondarily, a phlebitis may happen, and produce tenderness of the veins. Whether, as Haushalter maintains, the thrombus is due to typhoid bacilli, that cause in themselves or by their toxins the clogging,—and bacilli have undoubtedly been found in the clots,—has not been definitely proved. It is to be hoped that this view will be found to be correct, as it will elucidate and greatly simplify the explanation of an obscure pathological point.

Most generally the thrombus is gradually disintegrated without serious symptoms, and the phlebitis, if any have occurred, slowly yields, or an adhesive inflammation results, and a collateral venous circulation is established. Cases have, however, been recorded in which pyemia resulted from the disintegrating thrombus, or death took place from embolism, by fragments being washed to the heart and into the pulmonary artery, as in the cases of Nauwerck and Bouley. In the only fatal case that he has ever seen of phlegmasia alba dolens in typhoid fever death was the consequence of an embolic pneumonia following a thrombus in the right femoral vein. Gangrene is an occasional result of the state of the veins, and Keen, in his most interesting work on the "Surgical Complications and Sequels of Typhoid Fever," shows that, when the gangrene results from venous obstruction, it is moist, while, should a clot form in the adjoining artery as the result of pressure, dry gangrene attacks the foot; and when we encounter a combination of dry and moist gangrene we may infer that we have thrombosis both of the arteries and the veins.

But all such consequences are very exceptional, and the cases recover in the vast majority of instances. Every one of the thirty cases occurring recently in the hospital recovered. Yet the recovery is always slow; the clot is slow in disintegrating; the phlebitis, should it have occurred, slow in yielding. The leg, indeed, may remain swollen and clumsy for months, or readily become so after exercise. The superficial veins may show by their large and tortuous appearance how much the deeper venous circulation has been interfered with; or an adhesive inflammation that has been induced gives to the saphena or femoral veins a hard, corded feel. Even long subsequent to recovery the limb at times aches, and it may never return to quite its normal size.

The Relation of Diabetes to Insanity.

Laudenheimer (*Berliner klinische Wochenschrift*, 1898, Nos. 21, 22, 23, 24; *Birmingham Medical Review*) has studied the relations of diabetes to insanity in 1250 patients in the lunacy wards at Leipzig. Out of these he found eight cases of true diabetes and twenty-one cases of transitory glycosuria, a total of 2.4 per cent. He found that chronic diabetes generally coincides with brain-disease of the dementia type, while transitory glycosuria nearly always occurred in acute mental conditions associated with marked depression.

He thinks that the relation of glycosuria to mental disturbance may be thus classified:

(1) Accidental coincidence without causal relation.

(2) Diabetes consequent upon mental disease.

(3) Diabetes as the cause of insanity.

(4) Diabetes and mental derangement; both resulting from a common cerebral cause.

The first of these is of little importance. The second undoubtedly occurs, the glycosuria being apparently dependent upon great depression in the cerebral functions, or in consequence of a hemorrhage in the brain. The third form is that which most interests us, and of this he gives several examples. In one of these the condition was very like general paralysis, but the patient recovered. In the others there were maniacal outbursts. He thinks these attacks are analogous to diabetic coma, and due to the same chemical causes.

There was a marked relation between the age of the patients and the tendency to insanity, which occurred almost exclusively in old persons.

Transitory glycosuria was almost always associated with melancholia, especially with the so-called "délire de urine"; in the less common form, the patient is agitated, restless, sleepless, and querulous. In both these conditions antidiabetic treatment by diet has been successful in improving the mental condition.

Diaphragmatic Pleurisy.

Zuelzer (*Münchener medicinische Wochenschrift*, November 22, 1898) gives a description of pleurisy as it occurs between the diaphragm and the lung; a form which is very apt to give rise to localized encapsuled empyemata. There are certain special characteristics which enable the diagnosis of this condition to be made even in the absence of physical signs. These consist chiefly in certain tender points. The first is round the base of the thorax, at the level of the insertion of the diaphragm; the second is in the posterior triangle of the neck, where the phrenic nerve lies on the scaleni muscles; and the third is found where an imaginary line, prolonged in the direction of the tenth rib, cuts the parasternal line. It was first described by Guéneau de Mussy and named by him the "*bouton diaphragmatique.*" The presence of tenderness and pain in this position is most important, and is almost pathognomonic of diaphragmatic pleurisy, more especially of the localized suppurative form. De Mussy and most writers since him have considered this to be the tender point of the phrenic nerve, though von Ziemssen disputes this on the ground that the function of this nerve is entirely motor. Other peculiarities of this variety of pleurisy are:

(1) The pain is abnormally violent and diffuse. (2) Movement is almost suppressed in the hypochondrium and base of the thorax on the affected side. (3) Physical signs may be absent, or consist in a limited tympanitic resonance at the extreme base, and *minus* breath sounds, owing to the compression of the lung by the effusion. (4) Occasionally there is pain on swallowing as the food passes the diaphragm. (5) Hiccough may be present, either from direct irritation of the diaphragm, or possibly of the vagus or phrenic nerves.

It is important to remember that these effusions, when near the centre of the diaphragm, are out of reach of the exploring syringe. One of the cases seen by the writer is a striking illustration of the value of de Mussy's point in diagnosis. A woman, aged 30, fell ill with fever and pain in the breast. There were no abnormal physical signs in the lungs, and an exploratory puncture gave a negative result; the phrenic nerve in the neck, however, was tender and the *bouton diaphragmatique* extremely painful, and by these symptoms alone Dr. Bouveret, of Lyons, diagnosed suppurative diaphragmatic pleurisy, and immediately handed the case over to the surgeon. An encapsuled empyema was found and evacuated. The woman recovered.

The Frequency of Typhoid Fever in Infancy.

Morse and Thayer (*Boston Medical and Surgical Journal*, January 12, 1899), in order to establish whether or not typhoid fever in infancy is more frequent than is usually supposed, forty-five cases of fermental diarrhea, two of simple diarrhea, and three of iliocolitis were examined for action in the blood. The

children ranged between the ages of 2 and 23 months. One examination of the blood was made in each case, and it was made from the third to the fifty-sixth day of the disease.

In all of these cases only one gave a positive reaction, and this was in a child without any special symptoms except fever.

They concluded from their investigations, first, that typhoid fever, as has been commonly believed, is an unusual disease in infancy. Secondly, it is possible that women whose blood gives positive reaction, even though it be years after the occurrences of the disease, may in some way transfer this to their infants.

The Co-ordination of the Ventricles.

W. T. Porter (*American Journal of Physiology*, Vol. ii, No. 2, January, 1899) has performed a number of experiments on the mammalian heart. He discovered that ventricles cut entirely away from the auricles, and thereby completely isolated, could be kept contracting by blood supplied to them through a canula tied into the coronary artery. He also found that any portion severed from the remainder will beat when fed there with blood through the artery supplying it. He performed a number of other experiments with the idea of determining, first, whether the distention of the ventricles is governed by the auricles, and, second, whether the ventricles are dependent upon the nerve-cells or not. He concludes, first, that the synchronism of the mammalian ventricles is not dependent upon the nerve-cells; second, the synchronism of the ventricles is probably maintained through muscular and not through nervous connections; third, the synchronism of the ventricular contractions is not a function of the auricles, but is managed by the ventricles themselves.

Annual Report of the Loomis Sanitarium for Consumptives.

Stubbert (*Philadelphia Medical Journal*, January 21, 1899), in his report of this institution, states that 204 cases were treated in this sanitarium from November 1, 1897, to November 1, 1898; of these twenty-eight were discharged cured, and eighty-eight improved; of these 187 contained tubercle bacilli in the sputum. In thirty-seven there were no bacilli. He also states that 97 per cent. of those discharged gained in weight. The basis of treatment in all cases has been climatic, hygienic, and dietetic. The climate of the Adirondacks, at this place, is exceedingly severe in winter, but there appears to have been more marked improvement in the patients in the winter months than in the summer.

The author has noted that the patients in that place can withstand the high winds with impunity. He has seen them walk through almost a blizzard, while the snow was a foot or two deep, and has not seen a single case of bronchitis or influenza among the patients that could be attributed to braving the elements.

He allows patients, who have a moderate fever, to exercise, and, if their temperature is not above 100° F. in the evening, to walk moderately if it is not above 99° in the evening. No restriction at all is placed upon them, but they are encouraged to accustom themselves to taking walks of from two to twelve miles a day.

His opinion upon the serum treatment is as follows: "In view of the fact

that so far as bad results are concerned it has proved negative, and that, comparatively, a fair number of cases have apparently improved under its administration, I believe it to be the duty of the profession to continue the clinical investigation along this line."

As high as a gramme of ichthyol in keratin-coated pills has been given without any bad results, and with improvement in twenty-six out of thirty-four cases in which it was used. He does not believe that creosote can be used with benefit, on account of its deleterious effects upon the stomach, intestine, and kidneys.

Blaud's Pills.

England (*Philadelphia Medical Journal*, January 28, 1899) says that in spite of the fact that the official mass of ferrous carbonate is the essential ingredient of Blaud's pill, and also in spite of the fact that the ingredient is much less prone to harden in Blaud's pill, the pills are clinically preferred.

The original Blaud's pill consisted of equal quantities of purified, dried, powdered ferrous sulphate and pure, dried potassium carbonate, together with one-sixth the quantity of acacia, one-half the quantity of syrup, and an equal quantity of water.

When these ingredients are mixed, there is formed a ferrous carbonate. There is also some potassium sulphate, and a surplus of carbonate of potassium. It seems, therefore, that the presence of potassium sulphate and carbonate may be actually of therapeutic value, and not simply a by-product. Blaud's pill in 1880 was made an official formula under the name of pilulæ ferri carbonatis, in which there is no excess of potassium carbonate in the finished product.

The author has devised for use in the Philadelphia Hospital a formula for Blaud's pill that has been most satisfactory. Each pill, or rather a capsule, contains three grains of mass of ferrous carbonate, two grains of potassium sulphate, one-third grain of potassium carbonate, with sufficient althea and acacia to make the mass of proper consistency. The pills weigh over five grains each, are of medium size, keep for months, and remain soft and readily disintegrable.

The formula recommended is:

Mass of ferrous carbonate	36 grains.
Potassium sulphate	24 grains.
Potassium carbonate	4 grains.
Powdered althea	1 grain.
Powdered acacia, sufficient.	

Cerebellar Tumor.

Church (*American Journal of the Medical Sciences*, February, 1899) reports a case which, during life, presented the symptoms of cerebellar tumor, and was so diagnosed. This patient was skiagraphed, and a very distinct shadow was shown by the fluoroscope, with point of great intensity about the centre of what afterwards proved to be a growth. During life it was thought that the mass must certainly be a growth of vascular character, because it was decided that no growth of the same density of that of the brain tissue would cast a shadow.

At the post-mortem a tumor was found in the right cerebellar hemisphere, about the size of a lemon. On section the centre of the tumor was found to contain some blood-stained serum. Surrounding this central cavity the tumor tissue was deeply infiltrated with blood, which was evidently a recent hemorrhage. The rest of the tumor was of solid consistency and had the characteristic gelatinous appearance so suggestive of glioma. This case is quoted as being a rare instance where the X-rays were successfully used to confirm a clinical diagnosis of brain tumor.

Period of Incubation of Pertussis.

Illoway (*Pediatrics*, January 15, 1899), on incubation of pertussis, says that he believes that the period of incubation is more protracted than is usually given in the text-books; that it is not characterized by any febrile movement or evidenced by catarrh, and that it would thus remain unrecognizable but for one phenomena which it presents to us, and which, perhaps, more extended observation may demonstrate to a certainty to be pathognomonic.

He bases his conclusion on the observation of two cases. The first was a child, 5 years old, who lived in the same house with the observer. His attention was attracted by the fact that she would give a slight hack (cough). This would occur only three or four times a day. Careful examination of the patient showed every organ perfectly normal; this "slight hack" occurred only in the daytime for two weeks, and at the end of that time appeared in the night, when she would give two or three hacks during the night without being wakened from her sleep.

About three weeks after the appearance of the hack the child began to complain of feeling tired, and at the end of the fourth week the character of the hack suddenly changed and became a short moist cough, the child had all the catarrhal symptoms of pertussis, which developed into a severe attack of the disease.

Case II.—Developments of the same sort were continued for about two and a half weeks, when the catarrhal stage of pertussis developed. The disease ran its course in a mild form.

He considers that the hack described was a true and pathognomonic phenomenon of the entrance into the body of the toxic agent of whooping-cough.

Thymus Extract in Exophthalmic Goitre.

Parker (*British Medical Journal*, January 7, 1897) reports four cases of this disease treated for a prolonged period by the extract of the thymus gland together with fresh thymus glands. The first case was under treatment for six months, and used ten thousand grains of thymus extract, together with a large number of lightly cooked thymus glands. There was absolutely no change in her condition at the end of that time.

Case II was under treatment for about the same length of time. There was marked improvement in her condition, but the improvement had begun before the thymus treatment was instituted.

Cases III and IV give about the same history. The conclusion to be drawn from these four cases is that in them at least the thymus-gland treatment was neither beneficial nor harmful.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

ASSISTED BY

CHARLES H. FRAZIER, M.D., AND GEORGE M. PURVES, M.D.

A Study of Sixty-seven Cases of Primary Malignant Tumors of the Suprarenal Gland.

Ramsay (*Johns Hopkins Hospital Reports*, January, February, and March, 1899) reports three cases of sarcoma of the suprarenal glands, and draws the following conclusions from his study of the subject: (1) That while malignant tumors of the suprarenal gland are rare, they should be considered as one of the factors to be eliminated in the presence of an abdominal tumor; (2) that they are somewhat more common in the male sex; (3) that while in a certain proportion the symptoms are fairly well marked, there are many in which no symptoms point to the suprarenal origin; (4) that rapid loss of strength, debility, emaciation, digestive disturbances, and abdominal pain are the most prominent symptoms; (5) that skin-changes are rather the exception than the rule; (6) that they run a rapid course, the duration being shorter than usual with neoplasm in other organs; (7) that the diagnosis is impossible in many, and difficult in all cases; (8) that a differential diagnosis must be made from other suprarenal diseases,—from renal tumors, from hepatic tumors, from diseased retroperitoneal glands, and from cysts and new growths of the pancreas; (9) that the prognosis is always serious, even following a successful operation, from the great frequency with which both glands are found involved, and the tendency to early metastasis; (10) that operation gives the only hope of relief, and that it has been successful in two cases; (11) that the principal difficulties in the operation are the friability of the tumor, the great tendency to hemorrhage, and the frequency of adhesions.

Treatment of Abscess of the Brain.

Joseph Collins (*American Journal of the Medical Sciences*, April, 1899) believes that the mortality-rate of abscess of the brain has not fallen as it should have done, and that this result may be attributed to two factors: the lack of early recognition of the disease, and, second, that surgeons are oftentimes not sufficiently assiduous in their search for it. The fact that a third of all cases of intracranial abscess are secondary to otitic and rhinitic diseases, which are amenable to treatment, is generally recognized, but not generally heeded. Certain it is that the general practitioner is not sufficiently insistent upon examination of the ear after the occurrence of infectious disease, and not sufficiently persistent in the treatment of otitis media when found.

The mortality-rate of brain abscess will drop just in proportion to the earliest recognition and the courage of the physician in directing the surgeon to seek for it, even though there be no exact localizing symptoms. Abscess

of the brain, secondary to middle-ear disease, is located, in the vast majority of cases, either in the temporal lobe or in the cerebellar hemisphere of the same side. When one is reasonably sure of the existence of brain abscess no hesitation should be had in exploring first one of these regions, and then, if it is not found, the other. Delaying the operation until the appearance of unequivocal localizing symptoms, or procrastinating by operating on the mastoid after symptoms of brain abscess are evident, when one is reasonably assured that abscess exists, is a far greater injustice to the patient than subjecting him to an exploratory trephining.

Abscesses of the Cerebellum from Infection through the Labyrinth.

Green (*American Journal of the Medical Sciences*, April, 1899) reports three cases of abscess of the cerebellum and one of labyrinthine caries secondary to otitis media, the infection reaching the brain through the labyrinth. In all the cases a chronic tympanic suppuration was running its course, without other symptoms than otorrhea, when there was a sudden attack of vertigo, followed soon by dull pain in the depth of the ear. In one this was associated with marked increase of deafness. In all four headache was a prominent symptom, in three it was bilateral, in two frontal, and in one at the vertex. In none was there any occipital pain. In the fourth case, of simple caries without brain-disease, the headache was unilateral on the side of the affected ear, as is not uncommon with tympanic suppurations alone. Paralysis of the sixth nerve occurred in two, in one bilateral, in one unilateral on the opposite side from the ear-disease; it was, perhaps, due to pressure on the base of the cerebellum. Optic neuritis was present in one case, that of extensive encephalitis with abscess of the cerebellum. In one case there was facial paralysis from pressure on the nerve in the Fallopian canal. In only one case were there general septicemic symptoms; in the others fever was absent till near the end. Nystagmus was well marked in the patient with simple caries. It should not be regarded as a brain symptom, and was seen only in this one case of simple labyrinthine inflammation. Sclerosis of the bone, as is usually the case, existed in all the cases. The location of the caries was practically the same in all of these cases, —viz., on the inner (labyrinthine) wall of the aditus and epitympanum. In all four the external semicircular canal had been perforated where it comes against the additus wall.

The cerebellar abscesses were of about equal size and situated in the anterior and lower portions of the cerebellum, on the same side as the ear-disease. In all of the cases an accurate diagnosis before operation was absolutely impossible. They all show the value of the tympano-mastoid exenteration in exposing the whole interior of the bone, and thus showing the course which the inflammation has taken in reaching the brain, and thus determining at least the situation of the brain-disease, if not its character. The finding of the caries in the labyrinth, the absence of caries in all other parts, the exposure and exclusion of disease of the sinus by aspiration pointed to the labyrinth as the direct route of infection. In every case this proved to be correct.

Otitic abscesses of the cerebellum are due to the extension of the inflammation, either through the inner wall of the mastoid or through the labyrinthine passages. In the former the abscess is in the posterior portion of the cerebellum; in the latter, in the anterior portion. Posterior abscesses can be reached by removing the inner wall of the mastoid, and then by rongeurs or

gouge and mallet, carrying the opening backward to any desired extent, thus exposing the cerebellum below and behind the lateral sinus, thus giving most thorough and complete drainage. Anterior abscesses offer much greater difficulties; whether they will be as amenable to treatment as the posterior ones experience has yet to show.

Importance of Early Operation in Cholelithiasis.

A. H. Meisenbach (*Medical Review*, Vol. xxxix, No. 3, 1898), the author, concludes:

(1) That gall-stones occupy the same position as far as the welfare of the patient is concerned as do recurrent appendicitis, hernias, and other surgical conditions that may eventually endanger life.

(2) A patient suffering from so-called recurrent stomach cramps should undergo a rigid examination by competent persons, and if by ordinary means a diagnosis cannot be arrived at, an explorative laparotomy is justifiable.

(3) A patient known to have gall-stones should have the case plainly stated as to the benefits of an operation, and should, therefore, not be allowed to suffer for months and years.

(4) All known medical treatment is of no avail in over fifty per cent. of all cases.

(5) Surgical interference is the only rational means of cure.

(6) In case of early operation, cholecystotomy is one of the safest operations in abdominal surgery.

(7) That 90 per cent. of cases are benefited or cured by operation, the death-rate, 5 per cent. or less, shows.

(8) That procrastination endangers the life of the patient, and makes surgical operation more complicated.

Cystitis of Three Years' Duration due to the Typhoid Bacillus.

Houston (*British Medical Journal*, January 14, 1899, and *Medical and Surgical Review of Reviews*) reports the following case:

A woman, aged 35, had cystitis for which no cause could be found. The urine was turbid, opalescent, and strongly acid, and contained a small quantity of albumin. Centrifugalization showed squamous bladder cells, leucocytes, and some bacteria. A bacillus with all the characters of the typhoid was cultivated. The blood gave a well-marked typhoid reaction of 1 in 100. As the result was so unique another sample of urine, obtained with every possible precaution, was examined, with the same consequence. The patient was six weeks in hospital and had no temperature or other typhoid symptoms.

The history was that three years ago she helped to nurse two children who died, one of "bronchitis," the other of "diarrhea." Shortly afterwards she suffered from frequency of micturition. She was treated in the medical wards of a hospital during three months for painful and frequent micturition, and she occasionally passed blood by the urethra. She left considerably benefited, but still with frequency of micturition. She again was treated for cystitis during some months, and finally was sent to hospital a second time.

Houston could not find a record of any case of uncomplicated typhoid cystitis. In typhoid fever the bacillus is often found in the urine even some weeks after the temperature is normal (Petruschky, *Centralblatt für Bakteriologie*,

1892, No. 14). The case seems to be one of typhoid infection without the usual symptoms of typhoid fever, and since there is no point in the history suggesting infection after the onset, it is probable that the bacillus was present from the first. Moreover, it is so easily destroyed by more vigorous forms that it is extremely improbable that, at any time during the course of the cystitis, the typhoid bacillus displaced the colon bacillus. The acidity of the urine excludes the probability of other forms commonly found in cystitis being present. Houston remarks that the persistence of the typhoid bacillus in the bladder for three years appears less remarkable when cases are recalled of abscesses containing typhoid bacilli six or seven years after the fever. But we have already (*Review*, Vol. i, p. 130) called attention to more remarkable and more closely analogous facts. Buschke has recorded a case in which the bacillus was cultivated from an abscess of bone forty-six years after the fever. Completely parallel to Houston's case is Cushing's (*Johns Hopkins Hospital Bulletin*, May, 1898), in which cholecystotomy was performed in typhoid cholecystitis and the bacillus found, although there was no history of typhoid fever. Here, too, the blood gave the typhoid reaction.

A New Series of Six Hundred Thyroid Operations.

Kocher (*Correspondenzblatt für schweizer Aerzte*, Vol. xxviii, p. 18, 1898; *Medical Record*, February 25, 1899), in 1895, published the results of 1000 thyroidectomies; since then he has performed the operation 600 times. Of these, eighteen were for malignant struma, with six deaths; eleven for strumitis; and fifteen to Basedow's disease, two of these patients succumbing. Of 556 operations for colloid struma, only one resulted fatally, and that owing to the chloroform anesthesia. Since the prognosis of the operation at the present day is so very favorable, Kocher considers that the indications for surgical intervention may be more broadly regarded than heretofore, and undertakes the operation not only where medical treatment has failed after long trial, but also in those cases where such methods do not seem hopeful at the start, especially when there is the slightest suspicion of malignancy. Rapidly growing tumors, as also those that have become a deformity, demand early operation. The great indication is dyspnea resulting from tracheal stenosis through pressure, and medical treatment of such cases is entirely unjustifiable. Both iodine and thyroid therapy are not well borne for long periods, especially when, through old age, atheromatous vessel-changes with their concomitant heart and lung lesions increase asthmatic and dyspneic difficulties. An uncomplicated thyroid operation may at present be considered danger-free, and even in more difficult cases the risk is greatly decreased by the substitution of local cocaine anesthesia for general narcosis. Kocher still adheres to his old method of operating, and never does a total extirpation without urgent need, and even then endeavors to leave some small portion of the gland behind. Since 1883 only four instances of the cachexia strumipriva have resulted.

Injections of Gelatin in Aneurism.

Moyer (*Medicine*, March, 1898) draws the following conclusions from a review of the literature:

(1) Gelatin solutions are of some value in the treatment of saccular aneurisms. (2) They are of no value in diffuse enlargements of a vessel. (3) The

remedy is used empirically, the experimental work affording little or no basis for the treatment. (4) Solutions not stronger than 1 per cent. should be used. (5) Great care should be exercised in technique; failures in asepsis are easily made, as the solution is a good culture medium. The solutions should be kept in a brood oven to determine bacterial growth. (6) There may be dangers in the treatment, but the observations heretofore made are insufficient to indicate what they are. (7) Absolute rest in bed should be enjoined, and other remedies suitable for these cases may be given at the same time. (8) It is not a cure for aneurism, but may rank in the future as a treatment. (9) The method is worthy of more extended trial.

Peripheral Nerve Transplantation.

Peterson (*American Journal of the Medical Sciences*, April, 1899) reports a case in which the sciatics of a dog were successfully transplanted between the severed ends of the median and ulnar nerves of a man, and gives a summary of twenty cases of nerve transplantation. The median nerve alone was operated upon in seven cases, the ulnar alone in three cases, and the median and ulnar together in two cases. The musculo-spinal was operated upon in seven cases, and the sciatic in one case.

The injuries of the nerves necessitating transplantation in ten cases were due to removal of tumors involving the nerves. Incised wounds were responsible for four cases. Injury followed operation for necrosis twice, while gunshot wound, operation for gluteal abscess, ununited fracture, and simple fracture were responsible for one case each.

There were eight primary and twelve secondary operations. The time from date of injury to date of operation varied from forty-eight hours to one and one-quarter years. Eight of the twelve cases of secondary operation showed improvement in sensation or motion, while only four out of the eight cases of primary operation showed signs of improvement.

The distance between the fragments varied from three to ten centimetres. The distance did not seem to effect ultimate results. In nine cases the transplanted segments were from sciatics of dogs, in five from recently amputated limbs, in three from the sciatics of rabbits, and one each from the spinal cord of a rabbit and the sciatic of a kitten. In one case the excised nerve itself was planted.

In nine cases catgut was used as suture material, in three silk, and once kangaroo tendon was employed. Strictly speaking, no case can be said to have recovered completely, if by that is meant a complete restoration of sensation, together with a return of the muscles to their former size and power. In one case, however, the longest under observation (six years), sensation had entirely returned, and the only remaining weak muscle was the abductor of the thumb. In three cases there was practical recovery of sensation and motion, so that the hand was entirely useful. In two of these both median and ulnar nerves were operated on. There was complete return of sensation in four cases, and sensation was nearly complete in three. There was improvement in sensation in four cases, and improvement in muscular power is noted in four cases. There was improvement in either muscular power or sensation in twelve cases, while in six there was no improvement in either sensation or motion.

The average time in which sensation first appeared was about ten days,

while the average time was about two and one-half months. The author concludes as follows:

(1) Transplantation of a peripheral nerve segment to bridge over a gap between two ends of a resected nerve is a legitimate surgical procedure.

(2) Under favorable conditions, at least partial, and at times complete, restoration of sensation and motion may be expected to follow the operation.

(3) Regeneration of the peripheral end is due to down-growths from the axis-cylinders of the central end.

(4) From the slowness of the process the longer the time after operation the more favorable will be the results.

(5) Sensation may return very early after operation, and, as a rule, precedes return of motion.

(6) This rapid return of sensation is not due to down-growth of axis-cylinders or to conductivity of the transplanted fragment, but must be explained by collateral nerve-supply.

(7) In many cases very early return of motion after transplantation may be due to vicarious movements of other muscles than those formerly paralyzed, and not to a regeneration of the latter's nerve-supply.

THERAPEUTICS.

UNDER THE CHARGE OF

HORATIO C. WOOD, M.D., LL.D.,

AND

ARTHUR A. STEVENS, M.D.

Carbolic Acid in Surgical Practice.

Seneca Powell (*Medical Record*, March 11, 1899) read a paper with this title at a recent meeting of the Medical Society of the County of New York. He stated that about five years ago he had ascertained that in 95 per cent. alcohol he had an antidote to carbolic acid. He demonstrated before the society that a 95-per-cent. solution of the best crystallized carbolic acid could be rubbed freely on the hands and allowed to remain for a few seconds without any unpleasant effect from it, if the hands were then rinsed with alcohol. He said that he knew of three cases of carbolic-acid poisoning in which alcohol had been used successfully internally. Many of the results to be described had been obtained by using carbolic-acid solution of the strength of a half drachm to the ounce. This was the strongest perfect solution that could be made.

In *mammary, palmar, ischiorectal,* and *tuberculous abscesses* no difficulty need be experienced in controlling suppuration, if carbolic acid be properly used. His method was to open the abscess through an incision only large enough to empty it completely. The cavity must be thoroughly cleaned out by irrigation, swabbing, or curetting. After this had been done, the cavity should be first filled with strong carbolic acid, and the acid evacuated; then filled with alcohol, and the alcohol evacuated. By this method he had frequently succeeded in converting a foul abscess-cavity into a clean granulating wound in

from twenty-four to forty-eight hours. It was a mistake to suppose that ulcers and wounds would not granulate under such treatment.

Bone-abscesses were also amenable to the treatment. Dr. D. B. St. John Roosa had used this treatment for two years in *mastoid abscesses*, and had spoken very highly of it.

In *palmar abscesses*, in his opinion, the usual free incisions were not necessary. His practice was to insert a hypodermic syringe-needle deeply, and, as it was slowly withdrawn, to inject a solution of cocaine. He then made a small buttonhole opening, and injected carbolic acid and alcohol successively, after which a simple carbolized dressing was applied.

In the treatment of *empyema* he preferred to resect a portion of rib and evacuate the pus and masses of fibrin, and then irrigate the pleural cavity with carbolic acid solution of the strength of one drachm to the ounce. Of this solution he used about one pint, and while irrigating the cavity swabbed it out. He had recently evacuated two quarts of pus from a case of empyema, and had filled the cavity with a solution of carbolic acid of the strength of half a drachm to the ounce. A piece of gauze had then been inserted in the opening, and the dressing had not been changed for a week or more. By this time there was practically no further discharge.

A case of severe and extensive *erysipelas*, developing after a hernia operation, was cited, in which swabbing of the surface, first with pure carbolic acid and then with alcohol, had brought about a surprisingly rapid convalescence. This patient had had a temperature varying between 104° and 106° F., and had been considered practically moribund at the time the treatment with carbolic acid had begun. Facial erysipelas could be cured by one application of the pure carbolic acid. The acid should be allowed to remain on only long enough to whiten the surface, after which the alcohol should be substituted.

Dr. A. M. Phelps, in discussing the paper, said that he had verified in his own practice almost every claim made by Dr. Powell, except, perhaps, the treatment of erysipelas.

Dr. Carter S. Cole stated that he had obtained excellent results in *ivy-poisoning* by applying a 2-per-cent. solution of the acid continuously. He had tried the experiments of injecting abscess-cavities with a mixture of carbolic acid and alcohol, but had not obtained as good results as when these two agents had been used successively.

In closing the discussion, Dr. Powell said that as alcohol perfectly counteracted the effect of carbolic acid, it must be looked upon as a true antidote, whatever might be the theory as to its mode of action. He had learned that a 25-per-cent. solution of alcohol sufficed to counteract the effect of the acid. It is probable, therefore, that whiskey, brandy, and some of the wines might answer the same purpose.

Newer Substitutes for Morphine.

H. C. Wood (*Merck's Archives*, March, 1899) states that within the last two or three years, among the many compounds introduced as calmatives, three have been placed on the market which seem possessed of sufficient power to promise them a *rôle* of more or less importance in future therapeutics. These three drugs, which are all synthetic substitution products of morphine, are peronin, heroin, and dionin.

Peronin.—The feebleness of the narcotic properties of this drug in com-

parison to its asserted power to allay cough led Mayor to make especial study of its action on the bronchial reflexes. He found that peronin almost completely offset the tendency of the vapor of ammonia to excite cough, and concluded that the drug bears special relations towards the respiratory tract.

Heroin.—From the studies of Dreser and Strube, the action of heroin seems to be also on the respiratory function.

Dionin.—Pharmacological studies of dionin have been made by von Mering, who states that it is of somewhat stronger and prolonged action than codeine.

The therapeutic properties of these three remedies are in many respects similar. The chief use clinically, for which they have been employed, is to quiet irritative cough, especially such as often occur in phthisical cases. For this purpose the reports are unanimously favorable; rarely do they fail, and they are nearly free from unpleasant after-effects. The forms of cough they have been used in are as many as are the different causes of cough; in acute bronchitis, in chronic bronchitis, in various reflex coughs they have proved of benefit. It is claimed for all of them that they do not choke up the secretion nor affect disagreeably the general system. Heroin has been especially recommended in cases of dyspnea, either cardiac or pulmonary in origin, by Strube; but the very fact of its benumbing the respiratory centre would suggest that it must be used cautiously for this purpose, lest there result a failure in the elimination of the carbonic acid.

As for other therapeutic virtues, observers agree that heroin possesses neither analgesic nor hypnotic powers. Dionin, however, has been used by Korte to relieve pain, with asserted good results. In pains of inoperable cancer, of rheumatic arthritis, etc., he found it of great service, although not so powerful nor certain as morphine. From the results obtained by Meltzer peronin seems to offer prospect of proving a useful somnifacient; he found it especially useful in obstinate cases where the ordinary hypnotics have lost their power.

Concerning the drawbacks of these remedies, the only disagreeable symptom, save in one or two cases, noted is a tendency to an increase in the night-sweats of consumptive patients following the use of peronin. Dionin seems rather to lessen the amount of sweating. Of course, it is hardly possible to say as yet whether these remedies are likely to cause drug-habits. It is worthy of note in this connection that both heroin and peronin must be given in ascending doses if we wish to maintain their effect.

The doses for the three are about as follows: Peronin (soluble in 133 parts of water), one-sixth to two-thirds grain; dionin (soluble in seven parts of water), one-sixth to one-half grain; and heroin (very slightly soluble), one-twelfth to one-third grain.

The Three Lavages in the Treatment of Uremia.

H. Huchard (*Journal des Praticiens*, February 4, 1899, and *Medical and Surgical Review of Reviews*) says this treatment consists in lavage of the stomach, the intestine, and the blood. The object is to diminish the sources of intoxication. Do not delay until the appearance of convulsions, coma, and Cheyne-Stokes respiration; then it may be too late. Act when the first symptoms—dyspnea, which resists the milk diet, pallor, and muscular weakness—appear. A great number of the toxins of uremia form in the stomach, the intestine, and the blood.

(1) *Lavage of the Stomach.*—Possibly the patient has hyperchlorhydria, then the stomach sometimes contains very powerful toxins. In such a case, with contraction of the extremities, a toxin has been isolated capable of killing a rabbit in a few minutes. And if the stomach is dilated and retains toxins, is not the indication to evacuate them imperative?

(2) *Lavage of the Intestine.*—Ordinary enemata are not sufficient. Twice or thrice a day introduce by a long, soft tube three and a half pints of boiled water containing 7 per cent. of chloride of sodium. If the fluid is retained, it will act as a diuretic and force the renal barrier. If not, at any rate intestinal antisepsis is promoted and far better than by any drugs.

(3) *Lavage of the Blood.*—It is not necessary to introduce saline solution directly into the veins,—a delicate, difficult, and sometimes dangerous operation. The introduction subcutaneously of seven to ten or even seventeen ounces, twice or thrice a day, act almost as well. The quantity which can be introduced subcutaneously is almost incredible; three and a half pints have been injected at a time. In a month, one patient received twenty-nine pints subcutaneously and twenty-four by the rectum.

The "three lavages" have given M. Huchard excellent results in the treatment of uremia. He prefers this treatment to emetics and purgatives, which by repetition enfeeble the patient, to "intestinal antiseptics," which do not render the intestine antiseptic to all the drugs by which patients, already sufficiently poisoned, are poisoned. He does not altogether renounce purgatives, emetics, and above all bleeding,—a heroic treatment in certain cases. Sometimes bloodletting, in considerable quantity, should precede the subcutaneous injection; it will cause more rapid absorption.

Local Use of Suprarenal Gland in Diseases of the Throat and Nose.

H. L. Swain (*New York Medical Journal*, December 24, 1898) has used suprarenal gland locally in affections of the nose and throat with results which he considers remarkable. He used the aqueous extract, prepared from the dried saccharated glands of sheep. A solution is made by adding about ten to twenty grains to half a drachm of cold water; when the powder has been thoroughly stirred in, the whole is filtered. The result is a reddish-brown fluid, somewhat redder than but very nearly the color of good old sherry. This solution is unstable, and will not keep longer than three days, the signs of decomposition being evident by the formation of a deposit. A small amount of alcohol seems to increase its durability. The solution does not mix well with any drugs, and acts best alone. When sprayed on most mucous membranes it gives a sensation of slight warmth or stimulation, and induces immediate blanching by causing contraction of the small blood-vessels. When the capsule extract is sprayed on to an inferior turbinate the parts immediately become blanched, and then very gradually contract to a very considerable degree, but only over the area directly moistened. In an occluded nostril a second application allows the spray to reach the deeper portions, and the ultimate effect is to make the passage free. The author thinks the substance useful where it is desired to produce temporary shrinkage, to reduce congestion, and to secure a moderate degree of patency in a nostril. The edematous hypertrophy of the middle turbinate, such as appears in sneezing catarrh and in asthmatics, seemed to be very favorably affected by the extract. As in the eye so in the nose, there are cases in which cocaine will not contract a hyper-

trophy unless large amounts are used, and sometimes not then. In such cases, if the parts are sprayed thoroughly with capsule extract and a pledget of cotton wet with cocaine laid on after three or five minutes, satisfactory anesthesia and contraction will be induced. On the septum, if cocaine fails to produce the ischemia requisite for operating, the mucous membrane should be "deluged" with gland extract; then cocaine may be applied, and one can operate even on a "bleeder" with great comfort, sometimes almost bloodlessly. The author has used the gland extract in acute rhinitis, inflammation of the three tonsils, —faucial, lingual, and pharyngeal,—in pharyngitis, and in laryngitis, and he has been able to abort some of these conditions. Even in quinsy he has succeeded in giving more comfort by spraying with capsule extract, and then applying cocaine, than by any other means. He concludes that we have in the aqueous extract of suprarenal glands a powerful local vaso-constrictor agent and a contractor of erectile tissue, which it is safe to use in very considerable amounts without any dangerous or deleterious effects, local or general. These effects can be reproduced in the same individual apparently any number of times without engendering any vicious habit either in the tissue or in the individual. The use of the extract seems rather to increase the effects which may be expected from any given drug which may be used locally after it. In acute congestions it has its widest application and greatest opportunity for good, but in certain chronic conditions of the hay-fever type, where edematous tissue seems prone to develop, it can also be relied upon as a useful adjuvant.

Paraldehyde in Asthma.

McGregor (*Lancet*, No. 1, 1899) highly praises this hypnotic for allaying the paroxysms in spasmodic asthma and procuring sleep. He pronounces it absolutely safe, and declares that it not only relieves the spasm, but supplies the patient with a sleep that is tranquil, refreshing, and free from all evil after-effects. It gives rise to no habit, however long its use may be continued, thus making it more desirable than chloral or morphine. Even when potassium iodide or lobelia is used to relieve bronchitis and lessen spasm, the effect is immensely increased if paraldehyde is used in conjunction. It acts so quickly as a hypnotic in some instances that it is always well to have the patient in bed before taking it. The commencing dose for an adult is one drachm, which must be given diluted with cinnamon-water and tincture of orange-peel to overcome its pungency and unpleasant taste. The writer gives reports of eleven cases in which he has used it with unfailingly good results. His first was that of a young woman of 24 years, who had suffered from asthma for four years with very severe nightly attacks of dyspnea. Chloral gave no relief and a mixture containing potassium iodide, tincture of lobelia, and morphine hydrochlorate that for a time brought relief had lost its efficacy, and her condition became serious. She lost flesh, gradually grew weaker, and was cyanosed all the time. Half a drachm of paraldehyde was given every night at bedtime, and a week afterwards she reported she had slept well and had only one short, mild attack. The dose was doubled and then no attacks occurred. At the end of ten weeks the paraldehyde was stopped, and since then she had passed good nights, put on flesh, and acquired a rosy color. All the rest of the cases showed equally good results.

Wool Tampons in Nasal Hemorrhage.

Berens (*Laryngoscope*, September, 1898) recommends, in all cases of hemorrhage, from whatever cause, resulting from a solution of continuity of any portion of the nasal tract, a small tampon of sterilized lamb's-wool dipped in boric acid powder or nosophen. This is rolled up into a small ball, and "thrust" into the nasal chamber by forceps, and placed over the bleeding surface. As soon as it is released from the grasp of the forceps, and moistened by the blood, it swells rapidly, and encourages the formation of a clot in the interstices of the tampon. To remove it the nostril is instilled with several eye-pipettefuls of benzoinol, and after a few minutes the tampon will be easily and slowly removed without hemorrhage.

OBSTETRICS.

UNDER THE CHARGE OF

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ASSISTED BY

W. A. NEWMAN DORLAND, M.D.

Menstruation and Lactation.

An analytic study of 180 cases, in which menstruation occurred during lactation, has been made by L. Jacob (*Thesis*, Paris, 1898). He states that this occurs much more frequently and sooner after delivery in primiparæ than in multiparæ. It usually occurs about the sixth month of lactation in primiparæ. In duiparæ who have nursed their first children, it generally occurs between the eighth and twelfth months. After the third or fourth lactation menstruation rarely occurs during lactation. In multiparæ, nursing for the first time, the recurrence of menstruation seems to take place in proportion to the time which has elapsed since the first gestation. Some women menstruate during all pregnancies, some during none. Re-establishment of menstruation does not require cessation of nursing, but when a woman who is nursing for the fourth, fifth, or sixth time has a recurrence of menstruation much earlier than usual, it should generally be arrested. Pregnancy may occur during lactation, and the latter may usually be continued for several months thereafter.

Diabetes Insipidus and Pregnancy.

Vinay (*Lyon Médical*, No. 48, 1898) reports two very interesting cases of diabetes in pregnant women. The first was a neurotic subject, who, after intense emotion caused by fright, had polyuria. She became pregnant afterwards, when this symptom lessened. She advanced to normal labor, and was apparently making a good recovery, when, upon the thirteenth day, she had double pulmonary embolus, and died from cardiac complications on the twenty-ninth day after her delivery. His second case was one in which diabetes began at the fourth month of gestation. The immediate cause was intense mental shock following the burning of a portion of the patient's dwelling. The pa-

tient lost weight very greatly during her pregnancy, but advanced to term, and was spontaneously delivered of a living child, which died two weeks after birth. After her delivery the patient apparently did well, until five months had elapsed, when symptoms of pulmonary tubercle appeared, from which she died. It is very interesting to note that in both these cases profound mental shock was the immediate cause of the diabetes. The recovery of one of the patients was interesting and an exception to the rule in these cases. Pronounced diabetes is very fatal to mother and child as well.

Double Ovariotomy during Pregnancy.

Fischel (*Prager medicinische Wochenschrift*, No. 48, 1898) reports a very interesting case in which a patient, three months pregnant, was found to have double ovarian tumor. She consented to operation, and the tumors, which were dermoid, were readily removed. She advanced to term, and was delivered spontaneously of a living child, making a good recovery. It is interesting to note that 30 per cent. of ovarian tumors occurring in pregnant women are dermoid.

Dermoid Cyst in Pregnancy removed through the Vagina.

Routh (*Transactions of the Obstetrical Society of London*, Vol. xl, 1898, Part iii) reports the case of a primipara, four months pregnant, who had an impacted dermoid cyst in the pelvis. The tumor was removed by opening the posterior wall of the vagina with a conical incision, and separating the peritoneum by the fingers, drawing it down, and opening it. This gave the operator a tube of peritoneum through which to work. The cyst was then seized and a few adhesions separated. It was then punctured, liquid fat escaping. Traction was then made upon it, and it was drawn out and found to have a short pedicle, which could not be reached until the uterus was also depressed. A ligature was applied and a pedicle made. The patient recovered well, and was just about to go home when her temperature rose to 106° F. This was followed by abortion, from which she gradually recovered. There was no evidence of sepsis in this case.

Forty Cases of Fever in the Puerperium, with Bacteriological Examination of the Uterine Contents.

J. Whitridge Williams (*British Gynecological Journal*, February, 1899), for the past two years, has examined the uterine lochia bacteriologically in every case of fever during the puerperal period. The rule has been adopted of taking cultures from the uterus only in those cases in which the temperature rises up to or above 101° F. The work is of great importance in its practical applications, for a positive diagnosis can be made as to the presence or absence of puerperal infection, whereby the prognosis and treatment can be determined.

In the forty cases examined in the two years there were found streptococci in eight cases; staphylococci in three cases; colon bacilli in six cases; gonococci in two cases; anaërobic bacteria in four cases; unidentified aërobic bacteria in three cases; bacteria in cover glass, but cultures sterile, in four cases; diphtheria bacilli in one case: gas bacilli (bacillus aërogenes capsulatus)

in one case; typhoid bacilli in one case; cover glass and cultures sterile in eleven cases; cover glass and cultures sterile, with malarial plasmodia in blood, in one case; making a total of forty-four cases. This apparent discrepancy is due to the fact that a mixed infection had to be dealt with in several instances. These results are in accord with that observed by others, and only substantiate the doctrine that puerperal infection is wound infection, and like it may be due to a number of different bacteria which have been introduced into the patient from without. In the eleven cases in which cover glass and cultures were sterile the relation between the clinical symptoms and the bacteria found is not quite so clear as in the other cases; however, the presence of puerperal infection could be positively excluded. The temperature in these was probably due to an auto-intoxication from the intestines, for there was a rapid fall of temperature after brisk purgation. In some of them there were breast disturbances, and in some it was impossible to find any cause for the temperature.

Another eleven of the forty are interesting in that cultures of the ordinary cocci of puerperal infection could not be made, nor were the cultures sterile. In four of them anaërobic organisms were cultivated; of these four, two had short, thick bacilli; in a third was a thick bacillus, three to five times as long as broad. None of these organisms had a great degree of virulence. The last of the four ended fatally, and in it Williams demonstrated the gas bacillus.

In three of the eleven Williams cultivated aërobic bacteria, which he was unable to identify. From two of them he cultivated a non-pathogenic streptobacillus.

In the last four of the eleven, although bacteria were in the lochia, Williams was unable to cultivate them.

In some of these eleven the high temperature fell on brisk purgation. It is very doubtful if a causal relation existed between the bacteria and the symptoms observed, the latter being probably due to auto-intoxication. In these eleven cases infection by the more dangerous pyogenic bacteria was excluded.

Influence of Pregnancy on Ovarian Cysts.

Gottschalk (*Frauenarzt*, November, 1898) reports a case of a patient, aged 40 years, who had an ovarian cyst which two surgeons had declined to remove. She passed through pregnancy and labor normally, but on the second day after delivery developed symptoms of peritonitis, which subsided in the course of a fortnight. Nine weeks later she had a more severe attack, and abdominal section was performed successfully. The cyst was firmly adherent to the intestines, the pedicle was twisted twice around its axis, and the sac was filled with pus and foul-smelling gas. A pelvic abscess further complicated the case. These cultures of the colon bacillus were obtained from the cyst contents. The writer's deductions are that extensive adhesions may develop during pregnancy as well as after delivery. Torsion of the pedicle may follow the emptying of the gravid uterus in consequence of the sudden change in the intra-abdominal pressure. Infection of the cyst during the puerperium is well known, Zetter having reported twenty-one cases.

Tubal Fetation.

Mandl and Schmit (*Archiv für Gynäkologie*, Band lvi, Heft 2) find from experiments on animals that, when the Fallopian tube has been ligatured close

to the uterus directly after conception, no tubal fetation results. They conclude (1) that closure of the tube is not sufficient to produce a tubal pregnancy, and (2) that the tubal mucosa is not, as a rule, capable of forming a decidua. In the second part of the paper the writers describe in detail seventy-seven cases which were operated on in Schauta's clinic in Vienna. It is remarkable that a great number (twenty-seven) of these tubal fetations occurred in women suffering from gonorrhea. Out of sixty-seven cases where the pregnancy was interrupted in the first four months, it was due in eleven cases to rupture, in fifty-six to tubal abortion, and in four to both simultaneously.

Sudden Death after Childbirth.

Porak and Durante (*Gazette hebdomadaire de Médecine et de Chirurgie*, December 22, 1898) report the case of a woman who, on the ninth day after a perfectly normal labor, suddenly died while eating her breakfast. Post-mortem examination revealed a large embolus in one of the main branches of the pulmonary artery, the embolus having come from the right hypogastric vein, which was the seat of slight endophlebitis and thrombus formation. The thrombus contained many colonies of the color bacillus. The woman had a double uterus, which had been recognized antemortem, and a single kidney. The authors remark that streptococcus infection is characterized by distinct fever, while that due to the colon bacillus excites little or no fever.

Gemmell (*Lancet*, December 24, 1898) relates a case of sudden death from complete thrombosis of the basilar artery on the twelfth day after a normal parturition. The patient was a primipara, aged 40; the perineum was torn at labor; this was repaired at once and healed by first intention. She suffered from insomnia for the first four days, and the temperature reached 100° F. on the third, fifth, and seventh days; the pulse was 76. On the seventh day the nurse reported a "short fit," twitching of the muscles of the face and limbs, followed by a short period of unconsciousness. On the twelfth day the patient died suddenly while taking a cup of tea. Post-mortem all organs were found to be healthy, but the basilar artery was completely thrombosed. There was nothing to suggest septic mischief. The uterus was six inches long from the cervix to the fundus. Many cases of sudden death from ten to fourteen days after labor have been recorded, and as there was no post-mortem examination have been generally diagnosed as pulmonary thrombosis.

Puerperal Septicemia.

Munde (*American Journal of Obstetrics*, July, 1898), in an address before the American Gynecological Society, says that unquestionably, in the large majority of cases of puerperal sepsis in private practice, the infection comes from the fingers or instruments of the physician or nurse, and this statement applies not only to the poorer classes, but to a certain extent to those in better circumstances. It has been frequently stated that the women in well-conducted lying-in asylums are far safer from puerperal infection than those who are attended in their own homes. It is not only the hands and instruments which may introduce the infection, but also the clothing of the attendants, which may have been in contact with some infectious case and which has not been thoroughly cleaned and disinfected. Retention of portions of placenta or clots

or membranes does not necessarily mean their decomposition and a septic infection. This takes place only when the germs are introduced from without. He is confident, however, that it is not always the fault of either the physician or the nurse if septic germs enter after parturition. He believes that the septic germs may be sucked into the gaping vagina during change of position, or after a fecal evacuation, or by auto-infection. As an instance of the latter, he mentions a case of fatal sepsis in which the patient herself, having a discharging felon on her forefinger, introduced another finger of the same hand into the vagina to relieve an itching which she felt.

Artificial Dilatation of the Mouth of the Uterus during Labor.

Demelin (*L'Obstétrique*, No. 4, 1898) gives his experience with artificial dilatation of the os uteri during labor. One or more fingers of each hand are inserted within the cervix, and the os slowly dilated, until all the fingers can be introduced. In eleven cases of vicious insertion of the placenta, in which he employed this method, there were no deaths. In eclampsia, after labor has begun, it has given excellent results. In abnormal presentations—brow, parietal, and cross births, and when maternal exhaustion is threatened by prolonged labor—it is especially indicated. Of forty-nine patients Demelin lost two, one of eclampsia and one of apoplexy. He thinks this plan of dilatation is also serviceable as a substitute for Cesarean section, in sudden death, or when the latter is threatened.

GYNECOLOGY.

UNDER THE CHARGE OF

CHARLES BINGHAM PENROSE, M.D.,

ASSISTED BY

H. D. BEYEA, M.D., AND H. L. WILLIAMS, M.D.

The Bacteriology of the Cavity of the Uterus of the Non-Pregnant Woman.

Miller (*Johns Hopkins Hospital Bulletin*, January, February, and March, 1899) has made a study of the bacteriology of the cavity of the uterus of the non-pregnant woman. He observes that the vaginæ of both pregnant and non-pregnant women can be regarded as being under normal circumstances, free from pathogenic bacteria. The introitus vaginæ is the outer boundary of the aseptic zone. The abnormal cases, in which the vagina may contain pathogenic bacteria, are cases of gonorrhea, acute wound infections extending into the vagina, where the secretions of infected uteri, etc., are being constantly poured into the vagina, those in cases in which the vagina contains dead nutrient media, as in carcinoma of the cervix uteri, with hemorrhage and necrosis, cases of retained placenta, of necrotic submucous myomata, uterine polypi, and in tuberculosis of the vagina.

The cervical canal is likewise, under usual circumstances, free from pathogenic bacteria, and from a point at or just above the external os contains no bacteria whatever. In sixty-eight cases in which he studied bacteriologically the body cavity of uteri removed by the supravaginal method the results were

as follows: Of the sixty-eight cases, fifty-three showed changes of an inflammatory character, indicated either by endometritis or by inflammatory changes in the uterine adnexa. The uterine mucosæ in fifty-one cases were examined histologically, and nineteen of these showed an acute, or subacute, and twelve a chronic endometritis; eighteen of the cases showed no inflammatory changes in the endometrium. In *none* of the cases, where there was no endometritis, were bacteria found in either the stained specimens or in cultures. Concerning the bacteria found: the gonococcus was found seven times, the streptococcus pyogenes once, the staphylococcus pyogenes aureus once, the staphylococcus pyogenes albus twice, the tubercle bacillus twice, and unidentified saprophytic bacteria four times. Of all the bacteria, the gonococcus is by far the most frequent invader of the uterine cavity. It may invade the uterus through the previously healthy cervical canal, causing an acute endometritis, and subsequently by direct extension, inflammatory conditions of the tubes, ovaries, and peritoneum. The only bacteria which can invade the uterus through the external os without the help of external agencies, and under normal conditions, are the gonococcus and the bacillus of tuberculosis. It is of vital importance to the surgeon to know if the streptococcus pyogenes, the staphylococcus, and other pathogenic bacteria do exist in the uterine cavity, and, if so, under what conditions we may expect to find them, and what may be done to guard against carrying these micro-organisms into the peritoneal cavity or exposed wound surfaces.

In the class of cases previously mentioned, where the protective functions of the vagina and cervix are totally, or in a measure, lost by means of a prolapsus, or very much relaxed vaginal outlet, an open cervical canal, or destruction of the cervix by carcinoma, where the cervix and vagina are filled with dead nutrient material, as necrotic placental remains, carcinomata, sloughing myomata or polypi, both the pathogenic and saprophytic bacteria are liable to be encountered. Following also, of course, recent operative procedures upon the vagina or uterus, an acute wound infection may exist and thus infect the peritoneum of the patient upon whom a laparotomy is subsequently done. In puerperal sepsis, of course, also this danger exists. The gonococcus will also be frequently encountered in inflammatory cases, but may be disregarded so far as operative procedures are concerned.

In uncomplicated cases of hystero-myomectomy, hysterectomy for inflammatory cases, or ovarian tumors, operations for extrauterine pregnancies, and in all such cases where the vagina and cervix are normal, except, probably, for the invasion of the gonococcus, *the safest route so far as infection is concerned is the abdominal.*

In operations for carcinomata, especially where the cervix is necrosed, in submucous myomata, especially if the tumor encroaches on the cervix, and in similar cases of polypi, etc., in puerperal cases upon whom a hysterectomy is performed, and in circumscribed pelvic abscesses which are liable to be secondarily infected from the intestine, *the safest route with regard to infection is the vaginal.*

As the external genitalia and the surrounding parts are even more liable to contain pathogenic bacteria than the abdominal wall, the cleansing and disinfection of these parts is as imperative as the cleansing of the abdomen preparatory to operation.

Drainage through the vaginal vault in cases of laparotomy, unless imperative to arrest hemorrhage or in cases of wounded intestine where the suturing

is unsatisfactory, is almost as much to be deprecated as drainage through the abdominal wall. The vaginal vault should be, when possible, left intact.

In looking at the cases from a clinical stand-point he found a result that may not be uninteresting. Making a diagnosis as to the mode of infection from the history of the case, coupled with the bacteriological examination, he found that of the fifty-three cases showing inflammatory changes, twenty-six were, probably, of gonorrheal origin, twelve of puerperal origin, three due to tuberculosis, four to myomata or carcinomata, four to previous operations, and two unclassified. Some of the cases giving a history of puerperal infection undoubtedly owed their origin to the gonococcus. In these cases, therefore, the gonococcus was the probable cause of infection in more than one-half of them.

Sarcoma of the Uterus.

Franque (*Münchener medicinische Wochenschrift*, No. 41, 1898, and *British Gynecological Journal*, February, 1899). In the last ten years 3366 cases seen at the Würzburg gynecological clinic, included 304 uterine carcinomata (thirty-five affecting the corpus), and only sixteen sarcomata: sarcoma seems thus to be twenty times as uncommon as carcinoma, and twice as rare as carcinoma of the corpus uteri.

Only two of the sarcomata—one of the corpus and one of the cervix—certainly originated from the mucous membrane: in a polypoid tumor of the fundus the origin was doubtful. All of the thirteen parietal sarcomata developed like myomata, five were distinctly submucous (two polypi) or interstitial submucous, while there was only one interstitial subserous, one interstitial intraligamentary, and one entirely subserous.

Two tumors were primary, five certainly, and six more or less probably, to be referred to pre-existing fibromyomata; the derivation of the sarcomatous elements from the muscular fibres could not be demonstrated in any case, but was probable in two, and in these and three others their derivation from the interstitial tissue was indubitable. In six cases the diagnosis before operation had been fibromyoma. One woman was 40, another 34, and another only 27, but the average of the remaining thirteen was 51.6 years; six were nullipara; ten had from two to eleven children (average 6.5).

Chronic Inversion: Conservative Operation.

Everke (*Monatschrift für Geburtshülfe und Gynäkologie*, 1899, and *British Medical Journal*) treated a case of thirteen years' standing. The inversion was originally caused by a midwife attempting the extraction of the placenta in a normal labor. Reduction was attempted for a year by different well-known methods, then abandoned. At length there was much pelvic pain, and as the patient was now childless she wished for a chance of being able to become pregnant again. The inversion was complete. The catamenia were abundant, lasting eight days. Everke made an abdominal incision. From within, the inversion looked as might be expected, the uterus appeared as a thick-rimmed cup, the appendages passing into its concavity on each side, the anterior part of its brim lying close to the bladder, the posterior part overhanging Douglas's pouch. The uterus was drawn up by two tenacula; then a cut was made into the anterior brim, and extended almost to the bladder. Pressure was made on the fundus from the vagina, but without effect. The posterior part of the

brim was then seized with forceps and divided deeply, the incision being extended downward into the cervix and vagina. Once more pressure on the fundus was made from the vagina; this time the inversion was reduced. The uterus now lay in the pelvis, with a vertical anterior and posterior wound. The former was superficial; it was closed with silk sutures. The posterior incision was deep, involving the uterine cavity and the vagina. A layer of silks, tied inward, were passed into the edges of the uterine mucosa, including a little of the muscular coat; thus the uterine cavity was closed. Then a deep and a superficial set of silk sutures were passed into the muscular coat and tied on the surface of the uterus, the end of the wound opening the vagina being closed by the same line of sutures. As the uterus was limp it was fixed to the anterior wall by a suture passed three-quarters of an inch below the fundus. The ovaries and tubes seemed quite healthy. The next period after the operation was normal; it lasted four days, with scanty show. Everke believes that the patient may very probably become pregnant again. In discussing this case, Gummert (*Ibid.*) related two cases of total inversion. In the first it was caused by a midwife dragging on the placenta, and was reduced after some difficulty. The patient, aged 29, and very stout, recovered. In the second the labor (tenth pregnancy) ended after a few pains; the cord was very short. The patient died before any attempt could be made at reduction, hardly one hour after labor. Leisse reported a total inversion occurring in a girl, aged 15, after criminal abortion, though the precise nature of the malpraxis which caused the accident was never ascertained. Reduction immediately after the patient was seen failed; twenty-four hours later it was effected by pressure under ether.

Pelvic Disease: It is a Cause of Nervous and Mental Affections.

Peterson (*Journal of the American Medical Association,* March 25, 1899) discusses this subject. He states that he does not deny that pelvic diseases in women, attended by *exhausting pain,* may give rise to neurasthenic and hysteric states, but the influence of exhausting pain in these organs is no greater than similar exhausting pain elsewhere in the body. Nor does he deny that disorders of the female organs which affect the *nutrition* of the nervous system, such as excessive hemorrhage, or suppurative processes, may be important factors in inducing functional neuroses and even insanity, though disordered blood states brought about by pelvic disease are very infrequent as compared with disordered blood states dependent upon disease elsewhere. These are the main concessions, such as they are, that he should be willing to make in the argument with the gynecologist. There is no evidence whatever to support the opinion that insanity was ever due to a mere reflex influence from pelvic disease. In insanity the two great etiologic factors are hereditary instability and some physical or moral stress directly affecting the nervous system. There has never been brought forward any evidence whatever to show that either epilepsy or chorea can be induced by disease of the female organs. He takes the stand, therefore, that the field of the gynecologists in the domain of nervous diseases is comparatively restricted and unimportant, and in common with the best men of their own specialty, raises his voice in strong protest against the still prevailing tendency to enlarge the field of operative gynecology by unjustifiable and unscientific surgical interference in cases of nervous and mental disease. It is better to do too little than too much. It is

better to err on the side of science than to give the patient the so-called "benefit of the doubt," which should rather be called the affliction of the doubt. Let the gynecologist by all means treat any serious disease of the pelvic organs which may be present in any case of nervous or mental disorder just as he would a similar affection in an otherwise sound and sane woman, but let him not sacrifice upon the altars of strange gods those who trust to his knowledge, skill, and broad judgment. The reflex neuroses and psychoses are will-o'-the-wisps that lead one into obscure places, into a maze, and then vanish, leaving him astray, bewildered, remote from any familiar landmark.

Abdominal Hysterectomy for Cancer of the Cervix.

Irish (*Boston Medical and Surgical Journal*, March 16, 1899) states that in all cases of cancer at the os the operation chosen should be abdominal hysterectomy. Entirely apart from the relative difficulties of the two operations, and the fact that vaginal hysterectomy is an operation of accident, such as injury of the bladder, intestines, and notably of the ureters (the latter occurring so often that it has given rise to a new abdominal operation,—namely, one for implanting an injured ureter in the bladder), aside from all these reasons that can be deduced in favor of abdominal hysterectomy, there is still another, of far greater importance, that my own clinical experience with the abdominal operation has, in my mind, very firmly established, and that is the direction of extension of malignant disease from the os. In a series of twenty-five abdominal sections for cancer of the cervix he has found extension of infection in four cases out towards the pelvic wall, and a mass of infected cancerous tissue, probably glandular in its character, which was found not far from the internal iliac artery and very near the point where the uterine artery crosses the ureter. He has found this extension of disease on one side only, usually, and while in other cases, more advanced, there has been invasion of the structures under the broad ligaments above, still in these four cases there was no other extension of the disease. Furthermore, by any vaginal examination it was utterly impossible to locate or know of this extension. No such examination could possibly reveal its existence. These were cases that apparently had come for operation fairly early in the course of the disease. Besides, too, they would have been regarded as instances perfectly suitable for the vaginal operation, and had that been done the existence of this infection outside of the uterus would never have been known. The operation would have been completed without the least suspicion that the entire infected structures had not been removed, and if by any chance the diseased tissue outside of the uterus had been known to exist, in doing the vaginal operation it would have been utterly impossible to remove it; while by the abdominal route the complication was very readily recognized, and in every instance the diseased structures were removed without very great difficulty. That is, the abdominal operations in these four cases made a complete operation possible, instead of an incomplete one, as would have been the case had vaginal hysterectomy been done.

In a comparative study of the progress of cancer of the cervix and cancer of the breast we find, in one respect, very close analogy, as, for instance, in some cases of cancer of the breast when the tumor is extremely small and movable, and probably of very recent origin, there will be very apparent extension of the infection along the lymphatics into the axilla and below the clavicle, while in other cases the growth in the breast has existed for a long

time without any appreciable extension of the disease. That is, the condition of the breast itself really gives no certain indication of the extension of the infection that may have occurred beyond it. In cancer of the cervix the same uncertainty as to the involvement of lymphatic and cellular tissue exists. In two of the cases in which he has reported extension of the disease outside of the cervix, there was simply a small ulcer on the os surrounded by hardened tissue, the whole infected surface apparently not one-half inch in diameter. Still, in these cases cellular tissue was involved under the uterine artery and well out upon the ureter, while in other cases the cervix was extensively diseased and broken down, but not attended with any involvement of the tissue beyond the uterus itself.

While in cancer of the breast it is of no great importance to estimate before the operation the extent to which the lymphatic glands are involved, because we would remove all the axillary glands in any event, in cancer of the cervix it would be of great advantage to determine whether tissue outside of the uterus itself were involved, especially if we were ever tempted to do vaginal hysterectomy; but, unfortunately, the existence or non-existence of infected glands beyond the uterus cannot be determined before the operation, unless extensively involved. Therefore, he believes, the only operation justifiable in cancer of the cervix is abdominal hysterectomy.

The Pathology and Treatment of Uterine Gonorrhea.

Schultz (*Zeitschrift für Geburtshülfe und Gynäkologie*, Band xl, Heft 1), from a study of 200 cases in St. Rochus Hospital, has come to the conclusion that only when no gonococci can be found in the secretion, after careful examination, can we be sure that the case is no longer infectious, even if the secretions are no longer purulent. In a number of cases he found gonococci present even when the secretions were perfectly clear and free from pus.

Contrary to the statement of Bröse that in every case of gonorrhea the uterine cavity is ultimately affected, Schultz found many cases where the interior of the uterus was not invaded. In cases of cervical gonorrhea, 38 per cent. did not affect the endometrium. But the study showed that the tubes were very frequently affected. Many drugs were used in the treatment of these cases, but the best results were obtained by intrauterine injections of argentamin. These should be continued twice a week until the gonococcus disappears, unless inflammatory processes should necessitate the suspension of intrauterine treatment.

On the Removal of both Ovaries in Ovariotomy.

Theilhaber (*Monatschrift für Geburtshülfe und Gynäkologie*, December, 1898) gives the following rule as a guide for removing the second ovary when one ovary must be sacrificed. If the remaining ovary contains a few retention cysts it should be left after the cysts have been punctured or excised.

If a true papillomatous cyst is present in one ovary, the other ovary should also be removed, even if it appears healthy, since experience has proved that the ovary left behind frequently becomes papillomatous at a later time. True papillomatous cysts should not be confounded with retention and parovarian cysts, with excrescences growing from the inner wall, to which this does not apply. A beginning adenomatous degeneration of the opposite ovary may be

suspected if the tunica albuginia has become much thickened and the gland has been transformed, for the most part into a mass of large thick-walled cysts. When the case is in doubt, and in young women, the ovary should be split open, explored, and, if healthy, sutured once more with catgut. If one ovary is affected with a malignant disease, the other should always be removed.

PATHOLOGY.

UNDER THE CHARGE OF

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Phlebitis and Thrombosis.

Julius Mannaberg (*Klinisch-therapeutische Wochenschrift*, January 22, 1899, and *Medical Record*, March 11, 1899) makes the following remarks: "These conditions occur far more frequently than is generally supposed, and are recognized far less frequently than is desirable. The etiology of thrombosis has been very thoroughly worked up and discussed. Before the days of Virchow, phlebitis was looked upon as the primary condition; the veins were affected from some one or other inflammatory cause, an exudation became deposited in the lumen of the vessel, and to this the thrombosis appeared as a secondary affair. As a result of a dyscrasia of the blood thrombosis may occur without a preceding phlebitis. Virchow explains the occurrence of thrombosis upon mechanical grounds,—that is, through alteration of the lumen of the blood-vessel, lack of continuity, diminution of the cardiac power, or changes in the walls of the veins. Phlebitis is secondary to the thrombus. The experiments of recent date have shown that breaks in the substance of the intima and bacteria play an important part, in addition to which blood coagula arise. According to the views of other observers, thrombosis may occur as the result of bacteria or their toxins in the blood without any change in the intima. These opposing views are not yet definitely settled, and this is due to the difficulty of the examination and the interpretations of the result at the post-mortem table. In 1800 cases of post-mortem at the Vienna pathological-anatomical institute during 1898, there were ninety-six instances (6 per cent.) of thrombosis of the veins, of which a large proportion had succumbed to consecutive pulmonary emboli. Of these cases, thirty-nine had infectious diseases, thirty heart and blood-vessel changes, nineteen neoplasms, six marasmus, one chlorosis and nephritis. There is no infectious disease in which venous thrombosis may not occur; it frequently complicates typhoid fever, influenza, tuberculosis, diphtheria, malaria, etc. The occurrence of thrombosis in the later stages of typhoid is due to cardiac weakness and marasmus; the appearance of thrombosis three or four days after the beginning of diphtheria is traceable to a fatty degeneration of the heart and an exfoliation of endothelium. The occurrence of thrombosis in the crural vein after angina is due to metastasis. The

most frequent site of thrombosis is the lower extremities; then the upper. In diseases of the heart and arteries the thrombi arise in the femoral vein, the heart, or in the cerebral sinuses. Stenosis of the mitral valve leads to thrombosis, and the thrombi are more numerous in the heart the more marked the stenosis chances to be. In carcinoma the thrombi are found mostly in the lower extremities; Trousseau has already spoken of the occurrence of phlegmasia alba dolens as a symptom of carcinoma in the late stage. The cause of thrombosis in these cases is, according to Virchow, the cardiac weakness; but, according to the French school, some poison given off from the carcinoma. In marasmus thrombi occur in the femoral vein, the auricles, and the ventricles. Among the blood-diseases thrombosis is observed in chlorosis, leukemia, scorbutus, and morbus maculosus Werlhoffi; of these affections, chlorosis is the most important, and in this condition thrombosis is not so very rare, but is frequently overlooked. Three cases of thrombosis in leukemia were observed. In one young girl pains in the calf arose, which were treated with massage; after one of these *séances* collapse and dyspnea suddenly took place, the limb became swollen and tender, the pulse very small, the temperature subnormal. This was a case of crural thrombosis with embolism of the pulmonary artery. Later on thrombosis of the jugular and axillary veins, and perhaps of the heart, occurred. The occurrence of thrombosis in chlorosis is attributed by some to hydremia, by others to cardiac debility, and by von Noorden to bacteria; the absence of fever in most instances speaks against the latter view. In morbus maculosus Werlhoffi thrombosis of the nose often occurs after tamponing. Apart from these, septic thrombi following operation or childbirth were observed."

Experiments upon the Germicidal Properties of Blood-Serum.

White (*Boston Medical and Surgical Journal*, February 3, 1899) draws the following conclusions from a series of experiments upon the germicidal properties of blood-serum.

(1) Human blood-serum differs greatly in its germicidal action upon various kinds of bacteria.

(2) Our experiments indicate that normal human blood-serum is not actively germicidal for the staphylococcus pyogenes aureus or the streptococcus pyogenes.

(3) Human blood-serum does not lose its germicidal power for typhoid and colon bacilli, even in the late stages of chronic wasting disease.

(4) Human blood-serum in fatal disease occasionally loses part of its germicidal power for the colon bacillus shortly before death, but more frequently retains the germicidal power for this bacillus for several hours after death.

(5) A weakening of germicidal power of the blood-serum shortly before death undoubtedly favors an agonal invasion of the body by the colon bacillus.

Gonorrheal Septicemia and Ulcerative Endocarditis.

Thayer and Lazear (*Journal of Experimental Medicine*, January, 1899) report a case of ulcerative endocarditis of gonorrheal origin, and review the literature of the subject. On three of the four days immediately preceding death the gonococcus was obtained in pure culture in blood drawn from the median basilic vein. Two cubic centimetres of the blood mixed with four

cubic centimetres of agar-agar gave an abundant growth in forty-eight hours. Transplanted on human blood-serum there was a growth, but none on ox-blood serum, gelatin, or bouillon. This is the second case in which the gonococcus has been obtained in cultures from the blood during life, a previous instance having been recorded by Thayer and Blumer in 1895.

At the autopsy there were found ulcerative and vegetative tricuspid endocarditis, sero-purulent pleurisy and pericarditis, a pulmonary infarct, and hemorrhagic glomerular nephritis. Diplococci corresponding in every respect to gonococci were found in smears from the urethra, cardiac vegetations, heart's blood, and pericardial exudate. The authors have collected thirty-two cases in which satisfactory pathological records were made of gonorrhea with fatal cardiac complications. Of these thirty-one were cases of ulcerative endocarditis, and one of perimyocarditis alone.

A New Method of Straining Malarial Parasites.

Thayer (*Progressive Medicine*, March, 1899) states that Futcher has called attention to an extremely valuable method of using thionin as a stain for the malarial parasites. Upon a dried cover-glass specimen a little of a 1-per-cent. solution of formalin in 90 per cent. of alcohol is poured, and allowed to remain for one-half to one minute. The specimen is dried between leaves of filter-paper; absolute alcohol is then poured over the glass, which is once more dried, and then stained for from twenty to thirty seconds in Marchand's solution of phenol thionin, which is prepared as follows:

Saturated solution of thionin, 20; 2-per-cent. solution of carbolic acid, 100. The solution must stand for several days.

The specimen is then washed in water, dried between filter-paper, and mounted in balsam. If the specimen has not been stained too long the corpuscles take a very slight greenish hue, while the parasites are of deep violet color. The specimen should not be stained too long, as in pigmented parasites granules of pigment may be obscured by the depth of the color. This method is particularly valuable in that it brings out with great clearness the small ring-shaped hyaline bodies of estivo-autumnal fever with their chromatin dot. The chief value of this stain, however, is its readiness of application, which renders it particularly useful to the busy general practitioner.

The Bearing of Lymphatic Glands on the Modern Doctrine of Infection and Immunity.

Manfred (*Giornale internazionale delle Scienze mediche*, November 30, 1898, and *New York Medical Journal*) thus sums up his researches: The lymphatic glands co-operate in the struggle waged by the organism against bacteria which continually invest and threaten it from the surface of the skin and the mucous membranes, often successfully, by means of a triple function: (1) A filtering action, by which they keep the invading bacteria confined in their own tissues, thus preserving the general vitality for a longer or shorter time. (2) An attenuating action upon these same bacteria, by which they are killed, and then undergo in the adenoid tissue a partial or total loss of their virulence. (3) An immunizing action, resulting from the fact that the organism, under the influence of the two others, attains a state of immunity more or less varied and intense.

MISCELLANEOUS.

CYSTS OF THE PANCREAS.

Pollard (*British Medical Journal*, March 11, 1899) reports three cases of cyst of the pancreas, all of which were cured by incision and drainage through the anterior abdominal wall. The author remarks that cysts of the pancreas have frequently developed after abdominal injuries, and it has been suggested that their formation is due to extravasation of blood, and subsequently of pancreatic secretion from the lacerated gland. There was no history of injury in any of the author's cases. In two of them the onset of the illness was marked by severe pain in the epigastrium and by frequent vomiting; in the other case the patient had a sudden severe pain, which he located in the left hypochondriac region, and which, he stated, spread up to his chest and nearly choked him. Severe epigastric pain has been frequently noted as an antecedent of pancreatic cysts. Two of the patients had lost a good deal of flesh, and one of them lost five pounds in fourteen days. In all the cases the urine was free from sugar. In two there was an occasional trace of albumin. The stools appeared natural, and there was no excess of undigested fat. There was no jaundice before the operation in any of the cases. In one there was a slight attack after the operation.

All the three cases presented very similar clinical signs. In each there was a large tumor occupying the epigastric and left hypochondriac regions, and portions of the umbilical and left lumbar regions. The tumors moved very little with respiration, but they could be moved slightly from before backward and from side to side between the two hands. In two of the cases stomach resonance could be obtained by light percussion in the epigastric region, although the tumors appeared to fill that region, and the area of stomach resonance was increased by distending the stomach with gas. In one case the percussion note was dull over the most prominent part of the tumor in the epigastric region, although at the operation this part of the tumor was found to be covered by the stomach. In this case the transverse colon could be traced over the lower part of the tumor. In one case there was good resonance in the flank behind the tumor, and this was increased by injecting air up the rectum. In each case the tumor gave rise to a dull area in the left hypochondriac region, and it also

occupied the lumbar region, but it could not be made to fill the loin in the way that a hydronephrotic kidney either does or can be made to do. In two of the cases the lower end of the left kidney could be felt behind the tumor just below the last rib. The fact that the tumors moved very little, if at all, with respiration, and the presence in two cases of the stomach and in one of the transverse colon in front of the tumor showed that the tumors were not situated in the liver, and suggested that they were located either in the small bag of the peritoneum or in the retroperitoneal tissue. In one case distinct fluctuation and thrill could be elicited, and in all three the tense and elastic feel of the swellings suggested that they were cystic. In the first case the tumor was diagnosed as a cyst which was not connected with either the liver or the kidney, and it was thought to be either a pancreatic cyst, or a collection of fluid in the lesser bag of the peritoneum. The diagnosis of pancreatic cyst was made in each of the other two cases on the grounds stated above and on their resemblance to the first case; and in all three the diagnosis was verified after operation by an examination of the fluid removed from the cysts. In each case the fluid removed at the operation contained the three digestive ferments of pancreatic juice,—amylopsin, trypsin, and steapsin; but after they had been drained for a few days the discharge from the cysts was found to have lost its digestive powers over starch and fibrin; its fat-splitting properties were not tested.

Pancreatic cysts have come forward in at least three different situations,—namely, above the stomach, opposite the small omentum; between the stomach and the transverse colon, opposite the great omentum; and below the transverse colon, opposite the descending layer of the transverse mesocolon. The second of these positions is the most common.

In the first of the author's cases the cyst lay behind the stomach and the transverse colon, but it had not disturbed their relations; in the third case the cyst presented between the stomach and colon, and separated them from one another; and in the second the cyst presented below the stomach, and had displaced the transverse colon downward considerably; but as there were adhesions between the omentum and the abdominal wall below, it was thought unwise to disturb them sufficiently to determine the exact position of the colon. In all three cases the cyst was covered in front by omentum. In the first and third cases the great omentum and the ascending layer of the mesocolon had to be divided to reach the cyst wall; in the second case the tissues covering the cyst wall were so blended together that their component parts could not be identified.

THE O'DWYER FELLOWSHIPS IN PEDIATRICS.

A COMMITTEE of over forty physicians, representing sixteen different medical societies of the city of New York, and including representatives of both schools of medicine, has been formed for the purpose of doing honor to the memory of Dr. Joseph O'Dwyer.

The first meeting was held at the New York Academy of Medicine, November 22, 1898, under the chairmanship of Dr. J. D. Bryant, and was mainly devoted to organization. Dr. George F. Shrady was elected permanent chairman, and Dr. Alfred Meyer permanent secretary, and the following committee on scope and plan was appointed: Dr. Dillon Brown, chairman, and Drs. Robert Abbe, R. G. Freeman, L. Emmet Holt, and Louis Fischer. At the second meeting, held at the Academy of Medicine, March 13, 1899, the report of the Committee on Scope and Plan was adopted, and now only awaits final action of a meeting of the full committee.

The memorial to Dr. O'Dwyer will probably take an educational form, for, by the plan now outlined, it is proposed to raise a fund of $30,000, the interest of which shall support two O'Dwyer Fellowships in Pediatrics, open to competition by physicians who graduate in the United States, and to be held by the successful competitors for a period of two years. During this period they must furnish satisfactory proof of their engagement in original research work to a committee of five, one of whom shall be appointed by the president of Harvard University, one by the dean of the Johns Hopkins Medical School, one by the provost of the University of Pennsylvania, one by the president of the University of Chicago, and one by the president of the New York Academy of Medicine.

Many details of this general plan are still to be arranged, which it shall be the agreeable duty of the secretary to furnish to the medical press of the country just as soon as they are finally decided. This preliminary notice has for its object merely to acquaint the profession with the fact that a movement of this nature is on foot, and that an effort will be made to give it the international character so fitting as a memorial to an investigator of international reputation.

THE DIAGNOSIS OF CHICKEN-POX.

DR. FRANK W. WRIGHT, health-officer, New Haven, Conn., gives the following diagnostic points by which chicken-pox may be distinguished from small-pox.

Chicken-pox in a young child is easily recognized, but in an adult with a profuse eruption it is more difficult. In many instances in vario-

loid the constitutional symptoms are no more severe than in varicella, and to the eye the lesions are identical.

The stage of invasion in chicken-pox lasts but a few hours. There may be headache and backache of the same character as in small-pox, but usually less severe and of shorter duration.

The eruption sometimes appears in the mouth and fauces, and also upon the palms of the hands and the soles of the feet.

For a diagnosis we must depend upon the history, the course of the lesions, and the sense of touch.

In obtaining the history it is essential to ascertain the date of the last vaccination, if there has been exposure to either chicken-pox or small-pox, and the duration of the prodromal symptoms.

The papules in this disease are seldom seen on account of the brevity of this stage, except in persons with thick skins.

In these there may be an error in diagnosis on account of the length of time between the appearance of the papules and the vesicles. The vesicles are not full, are irregular in shape, and are easily ruptured and empty themselves. Around the edges the skin may be thickened, but not indurated. In a few hours they begin to dry in the centre, giving the appearance of being umbilicated, but close inspection will reveal a small black central spot, the beginning scab which causes this appearance, but never umbilication.

His attention was first called to this central dark spot in the vesicle of chicken-pox, many years ago, by Professor M. C. White, of New Haven, and close observation of many cases has verified his opinion, that it is very useful in establishing a diagnosis. There may be present at the same time both papules and vesicles in all degrees of development, and showing in successive crops, and varying greatly in size.

The diagnostic points are, the few hours prodromal symptoms, with slight constitutional disturbance and less intense headache and backache, papules last but a few hours and do not have the shotty feeling definitely marked, the vesicles form early and rupture easily, and if they appear to be umbilicated, can be distinguished by small black centres. The vesicles rupture early and dark scabs form, while the vesicles of small-pox become pustular, and when they rupture, have a thick, yellowish crust, and there is a much longer interval between papules and scabs.—*Pediatrics*, April 1, 1899.

JUSTUS'S TEST FOR THE DIAGNOSIS OF SYPHILIS.

Richard Cabot and P. S. Mertins, in the *Boston Medical and Surgical Journal* for April 6, 1899, publish a report of their investiga-

tions undertaken to determine the value of a test suggested by Justus for the diagnosis of doubtful cases of syphilis. The test depends upon the sensitiveness of the red blood-corpuscles in syphilitics to the action of mercury exhibited by inunction, or by subcutaneous or intravenous injection. This sensitiveness, which is said by Justus to be greater in syphilis than in any other disease, is shown by a sudden, sharp fall in the percentage of hemoglobin during the hours immediately following the administration of the drug. Later the hemoglobin gradually rises to a point above that seen before the injection. Such a sharp fall of 10 to 20 per cent. in the hemoglobin following the use of mercury was observed by Justus in over 300 cases of syphilis, and the absence of any such fall in non-syphilitic cases was attested by numerous central experiments. Cases in which no lesions are shown or in which the lesions have passed their acme are subsiding do not react characteristically. If the drug is given by the mouth no effect on the blood is to be observed. Intravenous injections act so rapidly that within an hour a loss of 15 per cent. of hemoglobin has been noted.

Cabot and Mertins tried the test in seventy-eight cases of undoubted syphilis, four cases suspected of being syphilitic, and thirty-three central cases of various other diseases, a total of forty-four cases. Inunctions were used, from fifteen to forty grains of mercurial ointment being given to each patient with directions how to apply it. The hemoglobin was measured before the inunctions, and twenty-four hours later, the tests being all performed by the same observer and with the same instrument. A change of less than 10 per cent. was not counted as a positive reaction.

In a general way Justus's results were confirmed. All the syphilitic cases reacted strongly and characteristically, and in thirty-three central cases there was but one genuinely positive reaction. Seven active syphilitic cases lost an average of 21 per cent. of hemoglobin after one inunction. The non-syphilitic case which yielded a positive reaction (a loss of 13 per cent. in hemoglobin) was one of chlorosis.

Strychnine in Alcoholic Neuritis.

Houghton cites the case of a young man suffering from alcoholic neuritis for which he was treated ineffectually for over a month. Finally he was put on one to ten grains of strychnine four times a day, and improvement began at once. Two weeks after this treatment was begun the patient was about on crutches, and in two weeks more walking about. At the present time (two years later) he is entirely well.—*Merck's Archives.*

CORRESPONDENCE.

To the Editors, University Medical Magazine:

Gentlemen,—In a recent review in your columns (March, 1899, p. 355) two points were cited for adverse criticism which seem to demand comment from a scientific stand-point. In the first place, the comparison of the optic disk as magnified in the upright image to "a twenty-five cent piece" is noted as incorrect. Every method of mensuration by real or virtual projection shows that at the accepted distance, twenty-five centimetres, it is close to this size,—generally larger. Jaeger projected his image to ten Vienna inches, giving a disk measuring thirty-one millimetres under an amplification of twenty diameters; but for convenience he reduced his amplification to seven in his "Hand-Atlas," and used habitually fifteen diameters in his "Beiträge," drawing his disks twenty-one to twenty-six millimetres in diameter. Oeller and others average larger (twenty-three to twenty-six millimetres): Frost and a few others somewhat smaller. If we work out the amplification of the reduced eye and multiply this into the size of the optic disk as measured under the microscope (one and five-tenths to one and seven-tenths millimetres, Kölliker, Piersol), we obtain like results. Helmholtz (Phys. Optik, 2d Ed., p. 217) gives this as fourteen and three-tenths when projected to eight Paris inches, which equals sixteen and seven-tenths diameters at twenty-five centimetres. Thus the image of a small nerve at eight Paris inches is twenty-one and five-tenths millimetres, and at twenty-five centimetres is twenty-five millimetres in diameter,—just the size of a twenty-five cent piece.

Of course, the projection-distance is a convention, and twenty-five centimetres or ten English inches lacks something of universal acceptance (although so general as always to be understood when amplification simply is stated); so a short-sighted ophthalmoscopist who wishes a pet particular distance of his own has a right to choose such; but if he depict any eye-grounds, he should state his limitations, and note that they are to be held by others at his chosen three inches, five inches, or other distance in order to represent the image seen. The tyro in microscopic drawing usually projects his image less than ten inches, and draws objects about one-half the conventional size; but that does not change the power of the microscope, nor will the direct method of ophthalmoscopy give an image magnified less than some sixteen diameters by the accepted standards.

As to the second point, your reviewer has the authorities with him instead of all against him; yet the tradition that myopia decreases with age (like the claim as to hypermetropia acquisita,—another phase of the same superstition) is one which Philadelphia's excellent refraction-work has done much to discredit. Of course, the pupil narrows with age, and the myopia causes a less defect of distant vision; but surely we should not be misled by so simple a phenomenon. Due use of mydriatics, with recognition that while they do not falsify the showing, they also do not *infallibly* uncover the true static refraction, lessens nearly to the vanishing-point the *apparent* instances of decreasing refraction, and throws the burden of proof that any real cases occur upon those who would here maintain the threadbare postulate.

Very truly yours,

B. Alex. Randall.

BOOK NOTICES.

A Text-Book of Obstetrics. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. With 653 Illustrations. 846 pages. Philadelphia: W. B. Saunders, 925 Walnut Street, 1898. Price, cloth, $5.00; sheep or half-morocco, $6.00.

Dr. Hirst has condensed into this superb volume the practical results of twelve years of active work in obstetrics and gynecic surgery, supplemented by a course of comprehensive research. To state that he has succeeded in making a most valuable contribution to obstetric science would give but a slight idea as to the true value of his book. In the point of illustrations alone the work is absolutely unique, inasmuch as they are almost entirely taken from original photographs and drawings, and are therefore to be found in this volume alone. While we do not believe that photographs teach as well as do the conventional drawings in very many instances, they are most certainly accurate and true to nature. The extensive experience of the author in the line of medical teaching has enabled him to present his subject in a beautiful, systematic, and comprehensive form, making at once the material easy of access and eminently readable. Especially to be commended is his presentation of that intricate and difficult portion of obstetrics, the mechanism of labor. The ones, however, well thought out are discarded for plain statements of facts, and therefore the student is left unperplexed, and able to grasp the fundamental laws of the various processes. Mention should be made of the most valuable series of illustrations of the various steps of the application of forceps, an operation which is probably abused more than any other in all of the various departments of

surgery. These show the successive steps of the operation upon the living subject, and are of incalculable value to students and medical men generally. Puerperal sepsis has been treated in a masterly manner, and all of the most recent methods and operations of worth are given the notice they merit. A number of very beautiful colored plates add to the attractiveness of the volume. There is much that is worthy of mention, and very little of anything that detracts from the value of the book. There is one point that we would take some exception to, and that is the apparent frequency with which the induction of premature labor or of abortion is suggested. In the hands of an expert like Professor Hirst, whose experience and judgment would at once indicate the suitable care for this radical form of treatment, such teaching is perfectly safe, but we would deeply regret the propagation of the theory that this is a simple and safe operation in the hands of any one engaged in ordinary general practice with its accompaniment of obstetric work. It should be done only with the greatest of reserve and by one well versed in the deeper problems of obstetrics.

An American Text-Book of the Diseases of Children. By American Teachers. Edited by Louis Starr, M.D., late Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania, etc., assisted by Thompson S. Wescott, M.D., Instructor in Diseases of Children, University of Pennsylvania, etc. Second Edition. Philadelphia: W. B. Saunders.

This work is one of the most popular of the "American Text-Book" series. This fact may be explained by the cardinal principles upon which the book is based,—namely, first, "careful condensation without omission, that the whole work may be embraced within the covers of one readily handled volume; second, limitation of the subject-matter to such practical points as etiology, symptomatology, diagnosis, and treatment, including feeding, hygiene, therapeutics, and the prevention of disease; third, the selection of a large corps of collaborators from the most important medical centres of our country, to secure for each subject the care of the authority best fitted to portray it; and, fourth, to have each article fresh and thoroughly abreast with the times."

In the present edition the whole subject-matter has been carefully revised. New articles on modified milk and percentage milk mixtures, lithemia, and orthopedics have been added. Tuberculosis and malaria are now placed in the section on infectious diseases. The articles devoted to typhoid fever, rubella, chicken-pox, tuberculosis, meningitis, hydrocephalus, and scurvy have been rewritten, while those on infant feeding, measles, diphtheria, etc., have been subjected to extensive revision. Thus fifty pages of fresh matter have been added.

Inasmuch as the diagnosis is the first important consideration in any case of illness, and as little or no help can be obtained from the patient, in the case of children, the methods of examination become of more than ordinary importance. It was with especial satisfaction, therefore, that we note a chapter on "the clinical investigation of disease,"

by the editor. No one can read this section without being impressed with the able manner in which it has been presented by the writer, or without being better prepared to practise pediatrics.

The contributors to this volume number sixty-five, all of whom are well known, and many of whom are in the very front rank of teachers and writers in their respective departments. It is not too much to say that this work is the best in the English language upon the subject of the diseases of children.

MODERN GYNECOLOGY. A Treatise on Diseases of Women. By CHARLES W. BUSHONG, M.D., Assistant Gynecologist to the Demilt Dispensary, New York. Second Edition. New York: E. B. Treat & Co., 1898.

The author truly says, in the introduction, that a large part of the minor gynecology must of necessity be done by the family physician, and he gives many arguments why this should be the case. He also states that "the effort of this book is to place before the physician a clear, common-sense statement of the symptoms of the various diseases of the female sexual organs; to indicate in detail the methods of treatment that can be applied by him, and also to indicate in brief the methods requiring the aid of a specially trained consultant of larger experience.

This object seems to have been accomplished. No anatomical or physiological data are introduced, but the author at once describes the proper course to pursue in examining patients. A brief description of menstruation is followed by a consideration of the abnormalities of this function. Diseases of the vulva, urethra, vagina, uterus, tubes, and ovaries are described in the order named.

The chapter on malignant diseases of the female genitalia has been rewritten and enlarged. A new chapter on hygiene and exercise has been inserted. Hematocele and sterility are also discussed. A description of the necessary office appliances and instruments will aid the beginner in supplying the necessary equipment.

As an outline of the subject for the beginner this volume will fill a useful place.

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SOME UNUSUAL FORMS OF TRICHOPHYTOSIS.[1]

By M. B. Hartzell, M.D.,

PHILADELPHIA,

Instructor in Dermatology, University of Pennsylvania.

In the past five years it has been my fortune to see a considerable number of cases of trichophytic infection which differed more or less widely from the common type. Some of these were mild forms of the disease, superficial in character, of interest chiefly as clinical curiosities; others were examples of the more virulent, less generally known, deep, suppurating varieties, in some cases presenting forms of cutaneous disease, whose mycotic nature has been recognized only within a comparatively recent period. In some of these cases the character of the affection was immediately apparent; in others the diagnosis offered more or less difficulty, and in a few it was made positively only after the excision and microscopical examination of portions of the diseased tissues. On account of the difficulty of diagnosis, and for other reasons, I have thought it might be of interest as well as instructive to report some of the more uncommon of these cases, together with brief abstracts of a few of the more remarkable ones which have appeared in recent dermatological literature.

The ordinary, superficial form of ringworm, as seen upon non-hairy parts, is, of course, familiar to every one, lay as well as professional. In rare instances it happens that, instead of a single, well-defined, annular lesion spreading centrifugally, there are two or more concentric rings, owing to a reinfection of the part primarily attacked. Unna and Crocker have each reported cases in which there were three such rings, and Arning one in which there were four. A few years ago

[1] Read before the Philadelphia County Medical Society, April 12, 1899.

a case came under my observation, in the person of a boy 10 or 12 years old, in which there were two concentric rings upon the posterior surface of the left shoulder, the outer one being about three inches in diameter.

That form of tinea circinata, called eczema marginatum by the older writers, occurs, as is well known, upon the inner surface of the thighs; much less frequently it attacks the axillæ as well. During the past few months I have seen an unusually large number of such cases, more than in all my previous experience, three of them occurring in one house. Of course, it is not at all unusual for ringworm to attack several members of a household; but I have not been able to discover why the axilla should be the part attacked in these cases. In one the eruption was perfectly symmetrical, both axillæ and the inner surface of both thighs being affected. In this case it is of great interest to note that the patient, who was a medical student, first noticed the eruption some two weeks before being taken ill with typhoid fever; during the course of the fever the skin affection disappeared, but returned promptly with the beginning of convalescence.

In an epidemic of ringworm occurring in Mannheim, Stern (*Archiv für Dermatologie und Syphilis,* Band xliv) met with some most unusual forms of the malady. In two cases affecting the chin, the disease spread, in one instance, to the inner surface of the lower lip, and in another, to the mucous membrane of the cheek, producing bright-red, elevated patches covered with numerous small, eroded papules and shreds of epithelium. Fungus elements were found in the lesions upon the mucous membranes in both these cases. In a third case a large pemphigoid bleb formed in the face, accompanied by nodules in the beard and kerion on one temple. Quite recently Pringle (*British Journal of Dermatology*, February, 1899) presented a man, 28 years old, before the Dermatological Society of London, who presented numerous patches of scaly dermatitis on the backs of both hands and the fingers as far as the roots of the nails, one of the patches being eczematous and discharging. The presence of the trichophyton fungus was demonstrated.

Among the rarest forms of ringworm is that affecting the palms of the hands and the soles of the feet. Several such cases have been reported by Djelaleddin-Moukhtar, of Constantinople. In one of the cases reported by this author (*Annales de Dermatologie et Syphiligraphie*, 1892), affecting the sole of the foot, the eruption had lasted six years, and bore such a close resemblance to a plantar syphilide that it was treated as such for a time. The discovery, however, of spores and mycelium in scales from the eruption revealed its true character. The difficulty of diagnosis in such cases may be considerable, but the

microscope would at once decide it, if suspicion of the mycotic nature of the malady once arose.

The deep forms of trichophytosis are much more important than the superficial varieties, not only because of the greater severity of the inflammatory symptoms accompanying them, but because they are much more apt to be mistaken for other inflammatory affections. Until recently the only forms of deep suppurating trichophytosis generally recognized were tinea sycosis, the so-called ringworm of the beard, and kerion, a trichophytic folliculitis of the scalp; but we have lately learned that the beard and scalp are not the only regions in which a deep suppurating folliculitis due to the trichophyton may occur. Painful and even destructive inflammations of the skin may arise from infection with this organism wherever hair-follicles exist. The most common form of suppurative trichophytic folliculitis is ringworm of the beard. As is well known this occurs usually upon the bearded portion of the cheeks and chin. I have recently, however, had under observation a case in which the upper lip was attacked, a region very rarely invaded by this fungus. Besides the unusual locality of the disease the case presented other noteworthy features. It was strictly unilateral, stopping abruptly at the naso-labial furrow, the right half of the lip being uniformly infiltrated and covered with a thick yellow crust. The hairs, contrary to the usual condition, were for the most part firmly fixed in the follicles. Upon the right cheek was a large, ill-defined ring composed of small, discrete nodules, some of which were superficially ulcerated and covered with small crusts, the whole looking not unlike a superficial tubercular syphilide. A few of the hairs were extracted from the upper lip and found to be filled with spores.

A few years ago Dr. Duhring and I reported (*American Journal of the Medical Sciences,* 1895) an undescribed form of disease due to the trichophyton, occurring upon the back of the neck. The chief features of this case were briefly as follows: Upon the left side of the back of the neck of a boy, 15 years old, were several crescentic patches of papular crusted lesions, together with numerous small, pitted cicatrices, the whole resembling a mild form of verrucose lupus vulgaris. The affection had lasted three years, and was slowly progressive. Examination of sections made from excised lesions showed that the disease was seated in the hair-follicles which contained an abundance of fungus elements, mycelium being especially abundant. A year or two later a case presenting precisely similar clinical features, occurring in a young man about 20 years of age, came under my observation. Unfortunately I was not able to excise any of the lesions, and the demonstration of the fungus was not made. A still more remarkable case, reported in detail elsewhere (*Journal of Cutaneous and Genito-Urinary*

Diseases, 1895), was under my observation a few years ago. A man, 32 years of age, suffered from a severe folliculitis of the left leg affecting the greater part of its surface, lasting about ten months, during five of which he was unable to stand or walk any length of time. In this case the presence of the trichophyton in the follicles was demonstrated in excised lesions, and a cure followed the use of parasiticide remedies.

In 1884, Leloir (*Annales de Dermatologie et Syphiligraphie,* tome v, Deuxième Serie), under the title "ANew Variety of Suppurative Perifolliculitis," reported a number of cases characterized by plaques of suppurating follicles occurring usually upon the back of the hands or upon the arms. Cases resembling these in their clinical features have since been reported by other observers in which the parasitic nature of the malady was demonstrated; and it is altogether likely that the cases of Leloir were also examples of trichophytosis, although the author expressly stated that no fungus was present. The failure to find any pathogenic organisms was, in all probability, due to the lack of suitable staining methods. The recent elaborate and painstaking researches of Sabouraud upon human trichophytosis have shown that the suppurative forms of this affection are due to a large spored variety of the fungus, and that these forms of the disease are commonly contracted through contact with some of the domestic animals. As illustrating the agminate perifolliculitis referred to above and its animal origin, I may very briefly relate the following two cases:

George V., 45 years of age, a farmer by occupation, presented himself at the Skin Dispensary of the University Hospital for treatment, having an oval, reddened patch on the back of the left hand, two inches in its longest diameter, considerably elevated above the surrounding healthy skin, and covered with numerous small pustules surrounding the hairs. The hairs had not fallen out to any great extent, but were for the most part firmly fixed in the follicles. A similar but smaller patch was upon the flexor surface of the left wrist, and behind the left ear was a half-dollar-sized one covered by a thick crust. The disease had existed for four or five weeks and was extending. The patient believed that he had contracted it from a calf, which he had been treating for an eruption characterized by scaly, partly bald patches, and he had brought an ear of this calf, covered with the eruption, for our inspection. Sections made from one of the patches on this ear showed an abundance of large spores around the hairs; and there is no doubt that this animal was the source of the infection. A few days later this patient brought with him a neighbor who had a dollar-sized, circular, inflamed patch, studded with pustules, on the extensor surface of the left forearm, and several smaller patches on the wrists. The eruption had existed about two months, and there was a history of exposure to the

same source of contagion as in the first case. Both recovered promptly under the use of parasiticide applications. Rosenbach ("Ueber die Tieferen Eiternden Schimmelerkrankungen der Haut") has reported a case of this kind, occurring in a servant-girl, 20 years old, in which there was a flat, solid tumor, the size of a three-mark piece, covered with nodules and pustules, situated upon the left cheek. Pressure upon this tumor evacuated scanty drops of pus. Cultures demonstrated the presence of the trichophyton fungus. As the patient's work brought her into daily contact with cows, these were the probable source of the infection, as in the two cases related above.

In rare instances the trichophyton has produced ulceration and even gangrene of the skin. In the epidemic of ringworm observed by Stern, referred to above, a case was seen in which a ringworm of the nape of the neck was followed by an ulcer two centimetres long and of considerable depth.

Under the title "Multiple Cachectic Gangrene," Eichhoff (*Deutsche medicinische Wochenschrift,* 1884) has published a most remarkable case of trichophytosis, which, notwithstanding its unusual character, seems to have attracted little or no attention from dermatologists. An 18-months-old child, two weeks after an attack of measles, suffered from an eruption consisting of dark-red spots, blebs with cloudy contents, and chiefly, ulcerations with steep edges, penetrating deeply into the subcutaneous tissues, many of these last lesions being covered with dry, black, gangrenous eschars. There was likewise a conjunctivitis of both eyes with swollen lids and purulent secretion. A microscopic examination of scrapings taken from the bottom and edges of the ulcers showed a fungus resembling in size and quality the trichophyton, the quantity of mycelium present being remarkable. It is also of extreme interest to learn that the conjunctivitis was likewise mycotic. The author attributes this unusual result of trichophytic infection to the cachectic condition produced by the precedent attack of measles.

Formaldehyde in Atrophic Rhinitis.

Richards (*Laryngoscope*) draws attention to the beneficial effect of a very dilute wash of this drug in the strength of five to ten drops to eight ounces of warm water. It should be used after the nares have been thoroughly cleansed by irrigating with the usual allowance of warm water, and, secondly, after the application of cocaine, the formation of crusts and the offensive odor both rapidly diminish.—*Treatment.*

OPERATION FOR PERFORATION IN A CASE OF TYPHOID FEVER.

By Edward Martin, M.D.,

PHILADELPHIA,

Surgeon to the Philadelphia, Howard, and St. Agnes's Hospitals.

As it is likely that, in the near future, operation will be the rule rather than the exception in cases of perforating typhoid ulcer, it is well that all instances of this operation, whether successful or not, should be published, that thus the profession at large, aided by the medical tabulator, may form a just estimate as to the average chance for life which this form of intervention affords.

The subject of this report was a boy, 12 years old, who was admitted to St. Agnes's Hospital on the 2d of May. He had been ill for about three weeks with fever, headache, pains in his abdomen, loss of appetite, coated tongue, abdominal tenderness, and marked tympany. On the morning following his admission, about eight o'clock, he complained bitterly of pain in the lower part of the abdomen. His pulse became rapid and weak, his temperature dropped to about normal, and the abdomen became tympanitic. He was transferred to the surgical service thirty-two hours later, and was operated upon at once. An incision was made in the right linea alba, a little below the umbilicus. Offensive pus escaped as soon as the peritoneum was opened, and the coils of intestine were found glued together by a fibrinous exudate, which, upon being broken down, allowed pus to escape in considerable quantities and apparently from many separate pouches. The intestines of the lower segment of the abdomen were so firmly matted together by exudate that much difficulty was experienced in locating the perforation. It lay in a coil placed far back, well within the pelvis. The guide to it was furnished by bubbles of gas and intestinal contents. The loop containing this perforation, the lower part of the ileum, probably not far from the ileo-cecal valve,—but this could not be determined positively,—was brought up by stripping it of its adhesions, and the perforation, about the size of an infant's finger-nail, was turned in and secured with a Lembert suture of fine cumol catgut; the adherent coils of intestine were then freely separated from each other, strips of fibrinous exudate being wiped and picked off, and a large quantity of thin stinking pus being evacuated, the entire belly cavity was then dried out by gauze sponges and thoroughly flushed with normal saline solution. The two flanks were finally drained with glass drainage-tubes; the pelvis and the upper segment of the abdomen by large gauze wicks.

The operation was finished in half an hour, and the child was much shocked. He partially recovered under hypodermoclysis and stimulating rectal enemata, and his bowels were moved freely. The fecal vomiting, from which he suffered before operation, recurred with the reaction from shock, and he died sixteen hours after operation.

From the operative stand-point it is important to note that the length of time which had elapsed between perforation and operation, thirty-two hours, made the finding of this small perforation extremely difficult.

I have operated in one other case of typhoid-fever perforation, or at least it was so diagnosed by the attending physician. The history was vague, and I can only say the diagnosis of typhoid fever was probable but not proven. Perforation had probably existed for several days, and the exudate had been limited by a plastic peritonitis, so that the operation simply consisted in cutting into a large abscess containing feces, pus, and gas, into which the perforation of the ileum, placed near together, opened. This patient recovered with a fecal fistula.

One other case of typhoid fever I was called upon to operate on over ten years ago. It was in a town near Philadelphia. The patient was in a moribund condition, with enormous distention of the abdomen. There had been no sharp pain, no sudden shock, and the belly, in place of being hard, was simply tympanitic. My own diagnosis was that of ante-mortem tympany from intestinal paresis. The attending physicians insisted that there was a perforation present, and I was persuaded to operate. An exploratory incision was made, occupying but a very few minutes. The peritoneum was found to be absolutely healthy. The patient died within an hour, his end being no doubt hastened somewhat by useless intervention.

I know of one other case in which the abdomen was opened on a mistaken diagnosis, and this mistake, with the growing enthusiasm for intervention in typhoid fever, is likely to occur often enough to give the legitimate operation a serious set-back. There are certainly cases in which a differential diagnosis is extremely difficult. In intestinal paresis there is likely to be an absence of pain, of fixed tenderness, and of the belly hardness which is a common accompaniment in peritoneal inflammation. Moreover, shock, and a falling temperature are not characteristic of this condition. When, however, a patient in the second or third week of typhoid fever complains of sharp, sudden, persistent, agonizing pain, of a great increase of tenderness; when this is accompanied by symptoms of marked constitutional depression, and it is followed by rapid and life-threatening tympany, if there is the slightest prospect of surviving operation, the abdomen should be opened at once.

PYONEPHROSIS COMPLICATING GONORRHEA.

By Charles Greene Cumston, M.D.,

BOSTON,

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Frank H., aged 22 years, a student, was under my care, in the winter of 1897, for an acute gonorrhea, from which he entirely recovered at the end of two months. He was seen in June, 1898, about three months after all discharge had ceased, and the "beer test" for gonococci was made, with a negative result. The "two-glass test" for filaments was also negative, and he was then discharged as perfectly cured.

In the middle of October, 1898, the patient again returned with an acute gonorrhea, which had been present for three days. He was ordered to take a bland diet, consisting chiefly of milk and eggs, and the following prescription was given:

℞ Acid. benzoic 6.0;
Natrii bicarb. 12.0;
Ol. gaultheriæ 4.0;
Sacchar. alba. . . . . 120.0.
Sig.—A dessertspoonful in a glass of Vichy four times daily.

For two weeks he did well, the discharge diminished in quantity, and we were about to order a mild astringent injection, when the patient complained of a little pain in the bladder and a frequent desire to micturate. This was on November 2. The patient was advised to remain quietly in his room and continue the same treatment. On November 5 I was asked to come to the patient's residence, and upon my arrival found him in bed. He said that the night had been poor; he had had chills and felt warm. The face was flushed, pulse 105, temperature 38.5° C. The treatment was changed to fifty-centigramme doses of urotropin, to be taken four times daily in a glass of water. Analysis of the urine showed bladder cells, large numbers of leucocytes, a few red blood-corpuscles, and cells of the renal pelvis, numerous casts, albumin 2.75 per 1000 cubic centimetres; total amount of urine 1250 cubic centimetres.

On November 19 the patient had vomited and complained of rather severe pain in the left side; the temperature had oscillated between 38.5° and 39° C., but to-day it reached 39.4°. Total amount of

urine, 890 cubic centimetres. Palpation of the abdomen revealed a large tumor in the region of the spleen and extending to within two fingers' breadth to the median line; the tumor was rather painful on pressure; it was soft, but fluctuation could not be made out. Percussion gave a dulness over the tumor, which was apparently distinctly limited.

A probable diagnosis of a left-sided pyonephrosis was made, and although the question of catheterization of the ureters with a Nitze cystoscope was considered, in order to be positive of the true nature of the tumor, I did not resort to it for fear of infecting the renal glands, which possibly were not diseased. In fact, there could only be to my mind a pyonephrosis of the left kidney or an abscess of the spleen, and believing that an exploratory incision through the lumbar region was the more prudent, it was decided to perform it the next day.

On November 20 the usual incision along the border of the sacro-lumbar and quadratus lumborum muscles was made, and the transverse fascia was incised. A soft tumor, which was the kidney, appeared in the wound; an aspirating needle was introduced about three centimetres into the kidney and 950 cubic centimetres of dirty yellow pus were withdrawn.

The needle was then removed, and an incision about six centimetres long was made into the parenchyma of the organ, and about 300 cubic centimetres of pus was evacuated. Introducing the index-finger, the cavity was carefully explored down to the pelvis of the organ, which was found greatly distended; although the parenchyma had suffered greatly from the effects of the suppurative process, still there was more than enough remaining to assure a good amount of functional activity of the organ.

The borders of the kidney having been sutured to the wound, a large drainage-tube was inserted well down into the abscess-cavity, and the lumbar incision was then closed above and below the opening in the kidney.

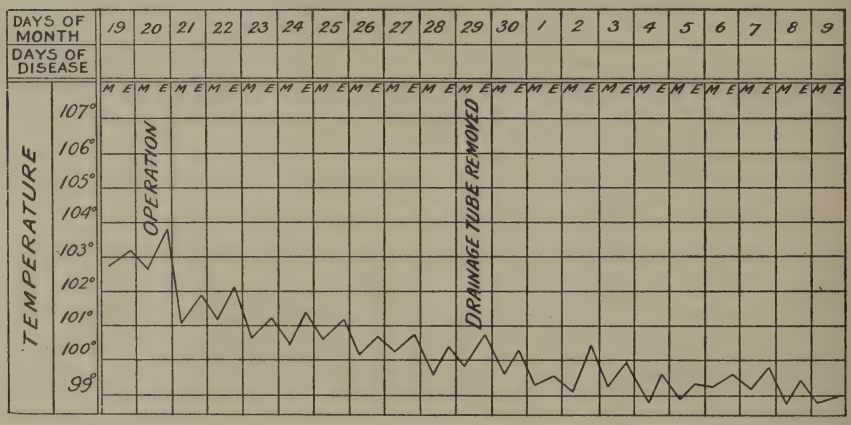
The temperature chart will show the course of the fever; and I here append the record of the excretion of urine in the twenty-four hours for the twelve days following the operation, after which time the daily quantity remained at about the normal,—namely, 1600 cubic centimetres.

November 20, 877 cubic centimetres, urine containing pus; November 21, 1010 cubic centimetres, urine containing pus and blood; November 22, 920 cubic centimetres, urine containing pus and blood; November 23, 1027 cubic centimetres, urine containing pus; November 24, 1150 cubic centimetres, urine containing a little pus; November 25, 1000 cubic centimetres, urine containing a little pus and blood;

November 26, 900 cubic centimetres, urine containing some pus; November 27, 1070 cubic centimetres, urine containing traces of pus; November 28, 1090 cubic centimetres, urine containing traces of pus; November 29, 1120 cubic centimetres, urine containing traces of pus; November 30, 1260 cubic centimetres, urine containing traces of pus; December 1, 1480 cubic centimetres, urine containing traces of pus.

The drainage-tube was left *in situ* for nine days, and then, as the amount of pus coming from the kidney had considerably diminished, gauze wicks were used. The opening contracted slowly, the discharge of pus decreased, so that eight weeks after the operation only a small fistula remained, giving issue to a little clear urine.

Although the nephrotomy demonstrated the existence of a pyonephrosis due to a gonorrhea, the symptoms presented by the patient, the history of the case, and the result obtained by physical examination,


DAYS OF MONTH
19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4 5 6 7 8 9
DAYS OF DISEASE
M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E M E
TEMPERATURE
107°
106°
105°
104°
103°
102°
101°
100°
99°
OPERATION
DRAINAGE TUBE REMOVED

were so far from being in any way characteristic of renal suppuration that the diagnosis could easily be made of some other abdominal tumor.

The urethritis was not severe, while pain in the region of the spleen and symptoms of septic infection dominated the entire clinical picture. At first we were of the opinion that the patient was suffering from some septic condition of the spleen, probably abscess, which showed its presence by the high temperature and symptoms of sepsis, and finally by the development of a good-sized tumor in the left hypochondrium.

Such reasoning was supported both from the fact that percussion dulness and limits of the tumor could not be differentiated from those arising from an enlarged spleen, which extended to within two fingers' breadth of the median line. The fact that the surface of the tumor was not indented, which, when present, will pretty conclusively point to a

diagnosis of tumor of the spleen, might have simply been due to a large abscess distending the organ. Tumors of the spleen often extend beyond the median line, while renal tumors seldom do so.

An abscess of the spleen may attain a very considerable size, and in a case reported by Fleischl the tumor extended towards the middle line as far as the umbilicus and downward into the pelvis, it was painful on pressure, and fluctuation could be elicited, while 990 grammes of pus were removed by puncture.

The position of the intestines in relation to other abdominal viscera is of considerable diagnostic importance, inasmuch as tumors of the spleen are situated *in front of the colon,* while an enlarged kidney would naturally push up the gut before it. This condition can be easily demonstrated by insufflating air into the bowel *per rectum,* but it should be remembered that a renal tumor may be so extensive that it compresses the gut and will not allow it to be distended by air.

In the case under consideration there was no edema, tumefaction, nor discoloration of the skin in the lumbar region, symptoms that are often present in renal tumors. The clinical symptoms presented nothing that was specially characteristic, the only one being pain in the region of the spleen.

We know, however, that renal tumors can compress the twelfth dorsal nerve and lumbar plexus, thus giving rise to pain in the abdominal wall, genital organs, and thigh. The reflex pain may attain such a degree that the patient will lie with the thigh flexed, and which, on casual examination, has been mistaken for a coxitis, but in the present instance there was no complaint of pain or numbness in the thigh, symptoms sometimes present, especially in renal abscess, due to pressure of the large nerves.

Another point upon which I desire to insist was the very slight cystitis present, and although not marked by any symptom, must, as a natural consequence of the renal infection, have been present, although it did not attain any high degree. The urine was always more or less cloudy when examined, but the pain in the bladder was practically unnoticed by the patient, and no frequent desire to void the urine nor dysuria were complained of, excepting at the onset.

Ebstein and other authorities have pointed out the absence of bladder symptoms in certain cases of pyelitis, while in other instances of this affection there may be such pain in the urinary reservoir that a mistaken diagnosis of cystitis is made. Now, although there was only a slight cystitis, the infection extended upward with such rapidity that in the short space of two weeks there was an extensive collection of pus in the renal pelvis, following a general suppuration and pressure atrophy of the parenchyma of the organ. The accumulation of 1250

cubic centimetres of pus in the renal pelvis is to be accounted for from the fact that the process also attacked the ureter, producing tumefaction and inflammatory infiltration of its mucous membrane, thus setting up a mechanical obstacle to the flow of pus and urine.

If the kidney continues to secrete and if at the same time suppuration increases, the parts situated above the stenosis are dilated, while the walls of the organ are reduced in thickness from pressure atrophy, and we know that the pelvis of the kidney especially is capable of undergoing very considerable dilatation. As the increase of pressure within the renal pelvis progresses the elastic and muscular elements slowly disappear, and consequently the expulsive force is insufficient to completely overcome the ureteral stenosis, and as a natural result the products of suppuration and urine cannot be given an exit. The pus, which under ordinary circumstances would be washed away by the free flow of urine, has time to develop its specific effect, and the septic process is maintained and increased.

There are cases on record in which the ureter was only slightly involved by the process, and nevertheless the inflammatory process in the renal pelvis had reached a high degree of development. But in these instances nephrolithiasis, congenital hydronephrosis, or ureteral stenosis may very probably have been present.

That, in the case here reported, there might have been a congenital hydronephrosis, which became infected by the ascending infectious process, cannot be positively eliminated, but that there was no complete stenosis is evident, and that there was still enough renal parenchyma capable of physiological functions is indicated by the amount of urine voided during the days following the nephrotomy, which, although not up to the normal, was quite sufficient, under the circumstances. The patient had never presented any symptoms of retention of urine nor uremia until the day before the operation.

As in all cases of suppurating pyelitis, the kidney was seriously affected by the process, especially its parenchyma. The typical symptoms of an acute nephritis arose,—namely, fever, decrease in the quantity of urine, presence of casts, pus and blood, with a percentage of albumin too high to be accounted for by the pus alone. Then, too, the patient vomited, and this was probably a sign of a commencing uremic intoxication.

Although the pus pent up in the kidney was thoroughly evacuated by nephrotomy and free drainage, and the patient's life thus saved, he is not as yet cured. There is still a little pus voided with the urine, and at present, four months after the operation, there is still a tiny fistula in the site of the drainage-tube, which gives exit to a small

amount of urine and pus, but I am in hopes that by proper treatment and patience we may be able to avoid the necessity of nephrectomy.

As to the etiological factors of septic processes in the renal parenchyma, it may be said that they are various forms of pyogenic organisms. A traumatism of the kidney, aided by the bacteria present, causes abscess-formation. The bacteria may come from an infected nephrolithiasis, a suppurating focus near the kidney, from the intestinal tract, or carried to the organ in the form of emboli, resulting in infarctus, more frequently met with in pyemic processes, and ulcerating endocarditis. The greatest contingent is furnished by foci of suppuration at some point of the urinary tract, which by an ascending infection first set up a pyelitis, then pyelonephritis, finally culminating in a general suppurative process of the entire renal parenchyma.

It is to be remarked, however, that our patient had sustained no traumatism, nor was there anything in the history of the case that would indicate the presence of a nephrolithiasis, neoplasm, or any pathologic condition in the kidney, but as there was an acute specific urethritis, we must conclude that the renal lesion was due to a gonorrheal process.

Some authorities are of the opinion that processes of suppuration, occurring in organs near the urethra or remote from it, during a gonorrhea, are due to a mixed infection of the gonococcus, with the staphylococcus or streptococcus, while others believe that Neisser's organism has pyogenic properties in itself, and can produce and maintain a focus of suppuration without the help of other pyogenic bacteria. It has also been pretty conclusively demonstrated that the gonococcus penetrates not only the surface of a mucous membrane but the underlying strata as well,—namely, the submucous membrane and muscular structures, and the organism may reach the peritoneum, causing a suppurative inflammation with all its serious consequences.

Wertheim has shown that the gonococcus can penetrate the muscularis of the uterus, go through it, filling the parenchyma in clusters, and even set up a suppurating inflammation on the peritoneal covering of the uterus. From here it may extend to the parametrium, setting up a suppurating gonorrheal parametritis, although this is not so frequently seen as perimetritis. The invasion of the gonococcus takes place by direct extension over the mucous membrane, as well as by the blood and lymphatic vessels.

It was formerly thought that the gonococcus could only penetrate the cylindrical epithelium, while the pavement epithelium opposed their passage, acting like a natural protective barrier. Other eminent bacteriologists, more especially Tauton and Jadassohn, are of the opinion that Neisser's organism can also penetrate the pavement epithelium,

even when several layers deep, and can there grow and multiply, and that the type of epithelium cell is of no great importance, the chief necessity being a sufficiently wide intercellular space, and that the intercellular substance be of as little consistency as possible; but, above all, the epithelium must be very *moist.*

It has been proven that the moist mucous membranes form a very excellent culture soil for the growth and multiplication of the gonococcus. The cylindrical epithelium is rapidly penetrated by the gonococcus, so that within three days after infection the organism will have penetrated the underlying connective tissue. The organism may also penetrate a moist pavement epithelium, but its growth is chiefly confined to the surface.

Now, considering these facts, it will be seen how the gonococcus may produce inflammatory processes in the ureter and renal pelvis, both of which are lined by a pavement epithelium, and that even the parenchyma of the kidney may ultimately be the seat of a suppurating process.

The pus taken from the kidney of the patient was found deprived of any bacteria, but this can be explained from the fact that fever will cause the gonococci to perish after they have produced their havoc in the form of a suppurating process. The proper temperature for gowth of the gonococcus is about 36° C., while if subjected to a temperature of 39° for six hours it will rapidly diminish, and cease completely at 40°.

Our patient was operated on when he had a temperature of 39.4° C., and for the several days previous it had oscillated between 38° and 39°. We cannot, consequently, exclude the possibility of the presence of the gonococcus in the kidney and its effect in the causation of the process, but the high temperature had killed it, and thus its absence in the pus can be explained.

We know, since Buchner published his researches on the protein of bacteria, that the organisms are not necessary factors in the production of suppurative inflammation, and that their proteins—that is, substances secreted by dying bacteria—are very potent factors for attracting the leucocytes, and consequently set up a process of suppuration. A partial destruction of the pyogenic organisms would be a preliminary step towards the inflammatory irritation and suppuration.

In the case here recorded, the conditions were such that the gonococcus was the direct etiological factor of the pyelitis and maintained the process in a state of activity, but when the temperature rose they underwent an involution and died, so that they could no longer be demonstrated in the pus. Just how much their proteins had to do with the lesion is hard to say, but as regards a suppurative process during

gonorrhea, where a mixed infection can be excluded with certainty and where the presence of the specific organism cannot be demonstrated in the pus, we should not conclude that the lesions are not of a gonorrheal nature any more than we would in the case of a tubercular synovitis where often no trace of the tubercle bacillus can be demonstrated, yet we would not for this reason doubt the nature of the lesion.

It is of daily occurrence that some cases of gonorrheal infection may be extremely mild, and in the course of a few weeks a complete *restitutio ad integrum* will have taken place, while in other instances the affection will be most severe with serious complications arising even during the acute stage, such as metastasis or ascending infection; in still other cases a cure appears to have taken place after a certain time, but, as a consequence of some accidental cause, a recurrence of the latent process is set up.

All this must be attributed to the varying constitution of different subjects, and it is well known that no one disease runs the same course or has the same intensity in every patient. At all events, the entire constitutional make-up, the age, general power of resistance, the remains of former inflammatory processes, and other *loca minoris resistentiæ* play a certain part in the intensity and extent of gonorrheal infections. It appears to me that gonorrhea should be regarded as a general infectious disease, the urethra being simply the entrance, and in which, in the large majority of cases, recovery takes place without any further extension of the process. In common with other infectious diseases, the complications arising in gonorrhea vary in number and intensity with each subject.

Generally acute gonorrhea in the male is a suppurating inflammation, limited to the urethra, recovery taking place in a few weeks when no complication arises. But there are cases where the specific process extends to the neighboring organs, such as the vas deferens, epididymis, prostate, seminal vesicles, periurethral glands, and bladder, resulting in a catarrhal or inflammatory process.

In less frequent instances we have infection of the joints or heart, produced by a metastatic infection, and very rebellious to treatment.

Now, when we consider the anatomical connection between the urethra and bladder, as well as the other organs composing the genito-urinary system, it would seem as if the kidney should be frequently the seat of gonorrheal infection, but in reality such is not the case, and it is within only a few years that renal complications have been recorded.

The reason why more such cases are not reported is because the symptoms of the renal lesions develop in a latent way, and only of limited intensity, a spontaneous recovery taking place. The urethral

manifestations are often entirely cured before the first symptoms of pyelitis or pyelonephritis make their appearance, and as patients often conceal the fact that they have recently suffered with gonorrhea, the etiology of the process in the kidney becomes obscure. The time between the disappearance of the local infection of the urethra and the commencement of the renal symptoms may be quite considerable, extending a year or even more, and I am of the opinion that a large number of cases of pyonephrosis and pyelitis are due to gonorrhea contracted some time previously.

The first who experimentally demonstrated that the gonococcus could attack the kidney was Bockhart, who inoculated the urethra of paralytic patients. Renal abscesses resulted and the gonococcus was found in the pus. This was in 1883. In 1890 Fuerbringer observed several cases where rigor, fever, polyuria, and localized renal pain, with vomiting and headache, developed after a gonorrheal cystitis, and examination of the contents of collective tubes of the kidney revealed the true nature of the affection. All the patients had the characteristic, rapid, acute course, lasting only a few days.

Two years later, Neuendorf showed that the gonococcus was the real factor of suppurating pyelitis, and in the case he reported the renal symptoms appeared eight weeks after the onset of the gonorrhea, although there were no symptoms of a cystitis. The pyelitis attained its maximum in twelve days, then gradually diminished in intensity, and in three weeks the patient was quite well.

But a gonorrheal infection of the kidney in no manner will often result in recovery, and as far back as 1889 Isreal was able to prove, by operation, that an acute suppuration of the kidney may follow. The case he reported at the time was that of a young, robust man, who became ill during an attack of gonorrhea with severe pain in the right renal region, and presented typhoid symptoms. Examination revealed a large fluctuating tumor in the right side, and nephrotomy gave issue to an enormous amount of pus. The kidney was reduced to a thin sack with a smooth internal surface, and Isreal explained this peculiar pathologic condition as an old and latent hydronephrosis, which had become infected by Neisser's organism; the hydronephrosis being in all probability congenital.

Isreal reported a similar case on which he operated in 1896. The patient was nineteen years old, and was suffering with his first attack of gonorrhea, when, without any symptoms of cystitis, he complained of severe pain in the right hypochondrium and serious general symptoms only eight days after the beginning of the urethral discharge. A week later the patient entered the hospital with high fever, dry tongue, and sunken features. The abdominal muscles on the right were very

tense, and palpation was almost impossible. The urine contained some albumin, but very few white or red corpuscles.

A careful palpation finally showed a tumor under the right rib, which rapidly increased in size, while the percentage of albumin also increased. On account of the very rapid development of this acute pyelonephritis Isreal again made a diagnosis of a gonorrheal infection of a latent hydronephrosis, which proved to be correct. By nephrotomy several litres of odorless pus were let out, and digital examination showed that the kidney was reduced to a thin-walled sac.

A bit of the wall was excised, and microscopically was found to be cicatricial tissue, in which glomeruli were embedded. As nephrotomy did not bring the temperature down nephrectomy was done three weeks later. The ureter was found stenosed at its origin with the renal pelvis, and ran somewhat upward in the wall of the pelvis of the kidney before taking a descending direction, a condition often found in hydronephrosis.

The gonorrheal infections of the kidney and its pelvis are, as a rule, confined to one kidney. The mucous membrane of the renal pelvis first becomes injected and is covered with a free secretion, composed of necrotic epithelium cells and varying quantities of pus. The inflammatory process may assume the diphtheritic type. It may happen, although infrequently, that the renal parenchyma remains exempt from a suppurative process in cases of suppurative pyelitis, and the pathologic changes in the kidney substance merely consist of a proliferation of the interstitial connective tissue.

But in most instances the process extends from the renal pelvis to the parenchyma, the latter first becoming hypertrophied from the hyperemia present. The pyogenic organisms enter through the openings of the papillæ and reach the collecting tubes, and gradually ascend into the uriniferous tubules. Now, the greater the dilatation of the tubules from retention of urine, the greater is the ease with which the bacteria advance. They rapidly multiply in the uriniferous tubules, and may even choke them, forming the well-known bacteria casts.

The epithelium undergoes a cloudy swelling, fatty degeneration takes place, and they are eliminated in a necrotic state. Pus-corpuscles, originating from vessels of the interstitial connective tissue, collect around the dilated uriniferous tubules, and are seen microscopically in the form of lines corresponding to the course of the uriniferous tubules, often extending from the apex of the papillæ, through the parenchyma, to the surface of the kidney, giving its surface a spotted appearance.

By the increase in number and coalescence of these lines of pus abscesses are formed, resulting in an extensive suppuration of the

kidney. The parenchyma is destroyed, not only by the suppuration, but from pressure atrophy as well, and finally only a small amount is left, the kidney being transformed into a thin-walled sack containing pus.

After the pus has been let out the cavity of the kidney should be carefully explored, and often we will find isolated masses of unaltered parenchyma. The abscess-cavities connect with the renal pelvis by fistulous tracts in many cases, that follow the course of the uriniferous tubes; the contents of these abscesses being composed of pus containing some urine. On account of the ammoniacal decomposition of the urine the pus may become transformed into a mucoid mass, or it may be that it changes to a sort of sebaceous detritus, while the precipitated urates and phosphates incrust the walls of the renal pelvis.

The pelvis of the kidney is often ulcerated, while large, irregular abscess-cavities are formed in the parenchyma of the organ, and the process may reach to such an extent that the calyces become gangrenous.

The prognosis of gonorrheal infection of the kidney is always serious, and if the kidney is very greatly involved, it is very bad. If the collection of pus is considerable, there is always danger that it will escape into the neighboring organs, peritoneal or pleural cavities.

A perforation of the abscess may take place into the pararenal tissue, in which case the lumbar region becomes tumefied, there is redness and edema of the skin and fluctuation can be obtained. The pus may extend downward to Poupart's ligament, and then a careful differential diagnosis must be made between the renal lesion and a psoas abscess.

In other instances the septic peritonitis will result in the formation of adhesions, and, then, if perforation takes place, it will most likely be into the bowel, the pus being discharged with the motions, and recovery may result.

When perforation takes place through the diaphragm into the pleural cavity and lungs, the patient generally dies in consequence of an empyema, severe hemoptysis, abscess, or gangrene of the lung.

Perforation can occur into the liver, spleen, or subdiaphragmatic tissue, and the prognosis naturally is based on the general condition and strength of the patient.

While the milder forms of pyelitis that appear in a subacute form, in either acute or chronic gonorrhea, recover rapidly without any treatment, any inflammatory process of the renal pelvis or parenchyma, accompanied by suppuration, are most prone to kill the patient from uremia, sepsis, and amyloid degeneration of the viscera.

There are, it is true, a few cases of suppurative pyelonephritis in

which the amount of pus is very great, but it can still be discharged through the ureter, because on account of a compensatory hypertrophy of the elastic and muscular elements of the renal pelvis, there is enough force to expel it. But if there should occur an inflammatory tumefaction of the mucosa of the ureter or any other obstacle to the passage of the pus, such as a calculus, etc., or if there be a congenital hydronephrosis, a condition, I believe, far more frequent than is generally supposed to exist, decomposition of the pent-up urine and pus results quickly, and the danger of the patient can only be removed by immediate nephrotomy.

As to treatment, nephrotomy is the operation of choice, although it may be a long time before the resulting lumbar fistula will close, and Guyon records a case where the fistula did not heal until five years after the operation.

A kidney must be preserved, if possible, at any price, as long as there is any parenchyma left to carry on its functions, and it is surprising how much work a few cubic centimetres of renal tissue can do.

If the healing of the fistula is long in taking place, and if pus still continues to be discharged after a reasonable time, the question of nephrectomy will have to be considered. The condition of the other kidney must be found out, and this very question is likely to be met with many difficulties. Even if cystoscopy and catheterization of the ureters are often of value, still in many cases they leave us quite undecided as to the true condition of affairs. And, furthermore, catheterization of the ureters is not by any means an indifferent operation, because the remaining kidney, if healthy, may become infected by this operation.

Nephrotomy does not surely give exit to all the pathologic products of secretion in every case, because they may pass in part through the ureter and mix with the urine coming from the healthy kidney, and, consequently, an analysis is not always a sure index of the condition of the organ.

Cherry-Stone in the Eustachian Tube.

Trautmann reports a case of severe chronic, suppurating otitis media, with perforation, in which syringing with tepid water dislodged and expelled a cherry-stone in the Eustachian tube, the cause of the ascending suppuration. As the patient spat it out of his mouth at the third syringeful, he observed that "his head was all free again," and all the lesions healed promptly. There was nothing to indicate its presence, but all efforts to cure the otitis would have been fruitless if it had not been discovered.—*Münchener medicinische Wochenschrift.*

A REPORT OF THIRTEEN CASES SHOWING PARTIAL REVERSAL IN THE VISUAL FIELDS.[1]

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It has been claimed that hysteria may be diagnosed by peculiar and reasonably constant changes in the visual fields, which are not explained by any recognizable organic lesions. There are three defects to which importance has been attached,—

(1) General contraction, in which the limit for white or form suffers relatively more than the limits for the colors.

(2) Annular or ring scotoma, situated at some point between the central field and the periphery; and,

(3) Partial or complete reversal of the normal order of the perception limits at the margin of the field.

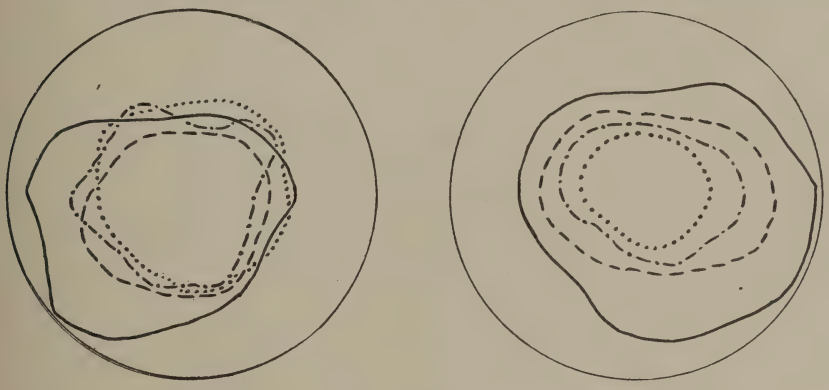
Contraction in varying degree is quite common, and appears in several of the fields which I shall show. Ring scotomas are probably rare, at least I have found none sufficiently definite to justify recording. If the claims made for reversal are well founded, I need make no apology for presenting to this society my group of thirteen cases, which includes all I have seen. In these the transposition exists for a part of the circumference only, but with many variations. I have seen no instance of complete reversal. Some of these fields present but slight deviations, but they are included to make the series complete.

At this point it may not be improper to say a word in defence of the perimeter, which, as an instrument of precision, has been looked upon with a certain amount of suspicion. It is quite true that none of the exact clinical methods are more dependent upon the skill and sincerity of the observer, particularly with neurotic patients, in whom the possibilities of suggestion are limitless. I very much doubt, however, if the personal factor is any greater here than in rapid clinical bacteriology or blood estimations. In the following fields suggestion and retinal fatigue were particularly guarded against. The patients never knew that anything unusual was expected or found.

I shall begin with, perhaps, the most interesting of my cases,—one of hysterical monocular diplopia, which I propose to report more fully at some future time. Very briefly my notes are as follows:

[1] Read by invitation before the Philadelphia Neurological Society, February 27, 1899.

Fanny R., aged 15, who worked in a woollen factory, but not among dyes, applied to me at the Germantown Hospital, in June, 1895, for relief of slight asthenopic symptoms, and a small hypermetropic error was corrected. Her appearance was that of unusual health, and she reported no accident or illness since childhood, and no disturbance of any bodily function. During a test of the extraocular muscles with the maddox rod, the patient explained some curious results by a very matter-of-fact statement that for four years there had been constant double images before the left eye, and a single image before the right. This I verified by repeated trials, the upper of the double images being always slightly to the right, and at twenty feet they were three to four inches apart. Using both eyes, three images were seen at a distance, and also at the reading point unless the type was held very close. Many careful examinations during several months confirmed the above facts, but they need not be given in detail here. The chart (numbered

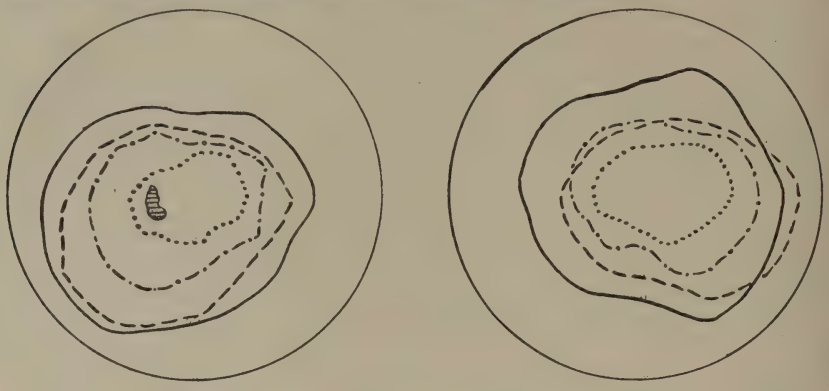


Left. CHART I. Right.

I) shows the field of the right eye to be normal in extent and arrangement, while that of the left eye shows very marked disturbance of the limits of perception, involving red and green principally, the latter extending beyond the form field for a considerable distance. Her eyes were otherwise normal and both possessed good vision. There was a total absence of the optical and mechanical conditions which are capable of producing double images.

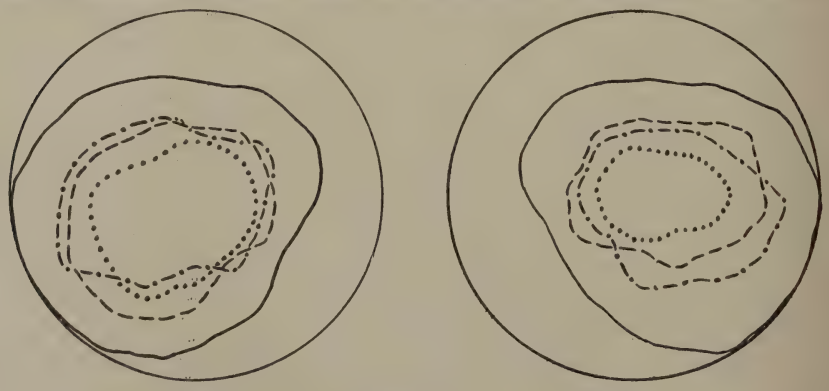
The second chart is my record in the case of F. H., who gave his age as 35, but who seemed several years older. There was incomplete infantile hemiplegia of the left side. Some years previously, after violent exercise, he had contraction of the left leg, beginning below and passing into the arm. He was unconscious for a short time, but without pain, and recovered completely. Similar attacks have occurred since, averaging less than one year apart, the last having

been quite recent. His eyes were myopic with an ophthalmoscopic picture to correspond, but the eye-grounds gave no indication of brain or general disease. I found no explanation of the scotomatous defect for red in the left eye. There were no important changes in the visual field beyond the moderate partial reversal in the right eye.



Left. CHART II. Right.

L. D., male, aged 23 years, the patient who furnished the fields recorded on Chart III, was the victim of a railroad accident, and the importance of a careful diagnosis was increased by the medico-legal aspects of the case. He was sent to me by my friend, Dr. Charles W. Burr, in December, 1897, at which time the fields were taken. They show practically normal limits for form and colors, except that red in

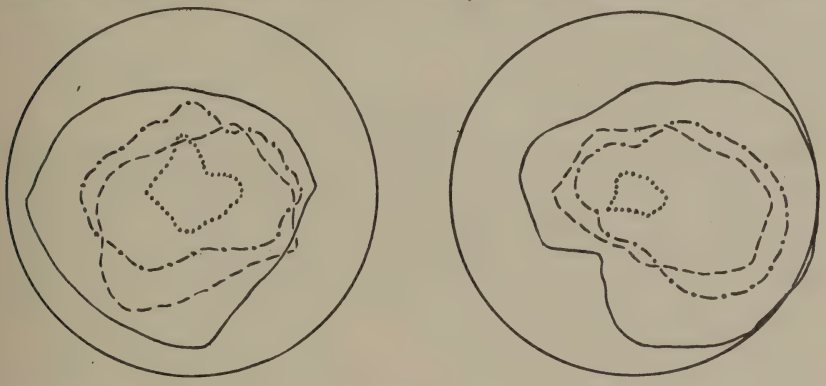


Left. CHART III. Right.

both eyes is recognized much beyond the usual distance, causing a partial reversal of the normal order. There was considerable hypermetropia, for which glasses had been worn, but no structual changes could be found in the media or eye-grounds. Dr. Burr has kindly furnished me with the following condensed history:

"The accident occurred four months previously, the patient being thrown in a sitting position, but the head was not struck. Since this he has had frequent attacks beginning with semiconsciousness and imperfect vision for half a day, followed by complete unconsciousness, lasting from two to four days. These attacks decreased in frequency, and now have been absent some months."

I am also indebted to Dr. Burr for the privilege of seeing another interesting case, recorded on Chart IV. Immediately after a fracture of the right parietal bone over the motor area, fifteen years previously, there was left ocular convergence and ptosis, in connection with general paralysis of this side, including the face. He was also completely anesthetic on the same side. The palsy and anesthesia entirely passed away in a few months, but later it was discovered that tactile sense was impaired in the left hand. Vision was good, and the eyes without

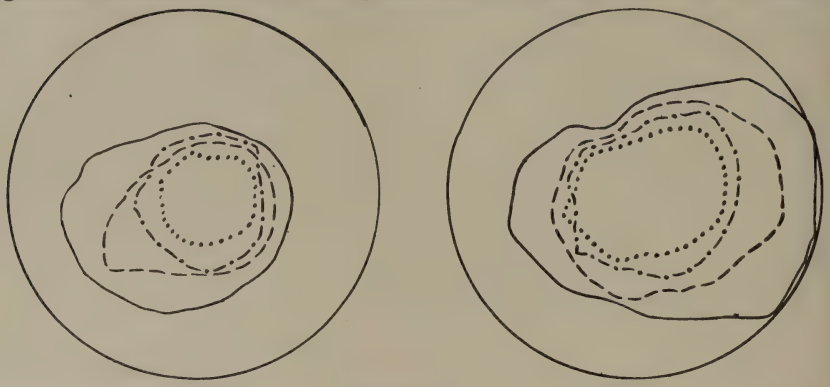


Left. CHART IV. Right.

disease. The patient took an abnormal interest in my examination, but gave no evidence of a desire to mislead. He had great difficulty in maintaining fixation, the eye under examination tending to aimless wandering, especially is this true of the right. In the left eye blue caused an early and annoying sense of fatigue and glare, which was equally present in all meridians, but not for other colors. This being a case in which suggestion would have yielded most brilliant results, it was carefully avoided, and I am quite certain the erratic behavior of the perception-limits was even greater than I have recorded. At the time of my examination the patient's age was 23 years. I am under the impression that no material change has taken place since.

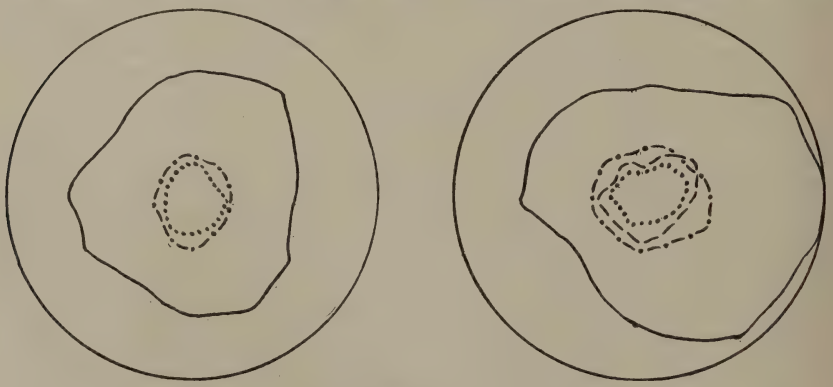
Chart V shows the fields in a case of entirely different character. Vision was very low, being about 1/10 of normal, and had not been materially improved by the high astigmatic correction required. He made no complaint, except concerning visual failure, which began

about three years before I saw him (?). He was married, had healthy children, and denied syphilis. He admitted the abuse of tobacco during many years, but could not be prevailed upon to do as much for alcohol, although to me he seemed a typical chronic alcoholic. The eye-grounds were normal in other particulars, but the optic nerves seemed



Left. CHART V. Right.

distinctly blurred in outline, and "dirty." The lower temporal quadrants were relatively pale, and I expected to find central defects. The fields show partial reversal, most marked in the left eye. In the same eye there is shown a marked contraction of all limits, but no scotomatous defects existed in either field. The patient had worked in dyes



Left. CHART VI. Right.

for many years, and there might have been harmful absorption. He refused to continue any form of treatment, and the subsequent course of the case cannot be reported. This was probably a form of optic nerve degeneration with a bad prognosis as to vision.

The patient who furnished the fields shown in Chart VI should, from his history, have had a central defect of the tobacco-alcohol type,

but, beyond a slight faulty perception of green in the right eye, this condition was absent, and I am of the opinion that it should be classed with the preceding case. He was a farmer, whose personal history had been uneventful until three months before consulting me, at which time vision began to fail without other symptoms. There was no

Left. CHART VII, *A*. Right.

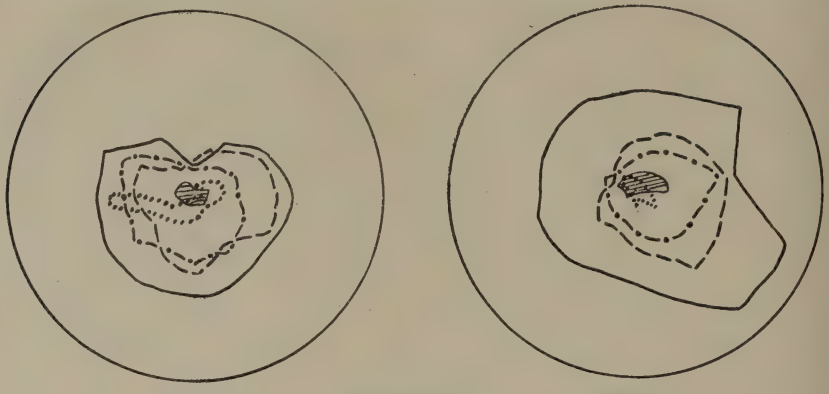
lesion in the media, and only a small error of refraction. The optic nerves were slightly hyperemic, and marginal blurring could be distinguished at a few points. He refused to admit abuse of tobacco or alcohol, but evidence of the latter, at least, was most abundant. The man was very unreasonable, refused treatment, and I never saw him again. There was marked contraction for colors only, with a large

Left. CHART VII, *B*. Right.

reversal in the right eye. In the left, blue was not seen at all, but within very narrow limits appeared faint green.

Charts VII (*a* and *b*), VIII, and IX give the complete perimetric records in three cases of central scotoma from combined tobacco- and alcohol-poisoning, which have been reported at some length with other

cases of a similar character. All of these patients were men in whom the ordinary nervous symptoms existed to a marked degree, and with whom treatment was interrupted and prolonged because of the difficulty with which their habits could be controlled. There were no motor disturbances known to me, and no sensory failure except of



Left. CHART VIII. Right.

vision, while all made reasonably good recoveries. All these cases show some contraction in addition to the reversal, but the case of greatest interest was that of T. F., a dissipated man of 38 years, who had two very careful examinations, five months apart, the records of which are numbered VII (*a* and *b*). The changes in the central color-blind areas are very considerable, but greater interest attaches to the

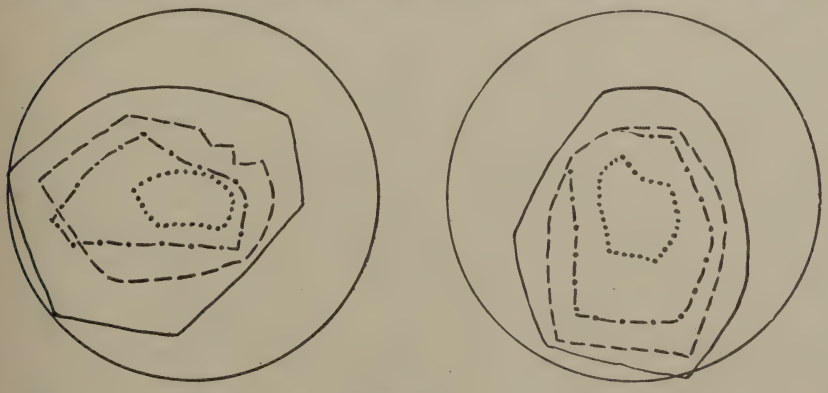
Left. CHART IX. Right.

progressive character of the reversal in the right eye, as shown by the two fields, and the appearance of a similar condition in the left eye at the second examination. It will also be noted that while contraction of the general field for colors existed at the first, contraction of the form field appeared only in the second examination.

The visual fields Number X are those of Mrs. D., aged 36 years, who was referred to me by Dr. I. P. Willits, of Germantown, to whom I am indebted for permission to report the case here. The patient was a frail-looking woman, with a history of hemoptysis. Eleven months before my examination, and while pregnant, she noticed a sudden fall-

Left. CHART X. Right.

ing of the left upper eyelid, and a partial paraplegia, during which she could walk with difficulty. There was no unconsciousness, and control of the bladder and rectum remained normal. From the beginning of this pregnancy she had sharp pains in various parts of the body, and the above ptosis was preceded by a lightning pain from neck to



Left. CHART XI. Right.

legs. Paralytic involvement of various extraocular muscles appeared in varying degree dependent somewhat upon physical and mental conditions, but without regard for the laws which control organic disease of the same organs. Various other motor and some sensory symptoms, which need not be detailed here, confirmed the diagnosis of hysteria.

Her symptoms yielded to treatment, only to relapse from time to time under the strain of domestic anxieties. The amount of reversal in this case was small and in the unaffected eye only, but there was marked contraction of the fields for form and color.

Miss A., aged 27 years, furnished the fields numbered XI. She gave a history of headaches and asthenopia, extending over several years, partially relieved by glasses. There was nasal catarrh with obstruction, and some form of pelvic disease for which she submitted to operation soon after my examination. She presented many of the minor but unmistakable symptoms of hysteria, and the perimeter gave reversal of the red and blue limits for about 15 degrees in one eye.

The field numbered XII is from a case of acute hemorrhagic retinitis of the left eye only, occurring in a young man, aged 20 years, of good habits and with a personal history free from important illness. He considered himself nervous, but in my presence the evidences of

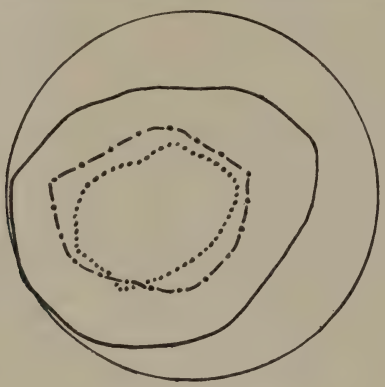


CHART XII. Left.

this were slight. He complained of a brownish haze occupying the centre of the visual field, but no scotoma could be discovered at the time of my examination. The small point of reversal was temporary. Treatment resulted in recovery of normal vision in six weeks, with absorption of all retinal deposit.

Fields Number XIII were taken during the course of a case of descending optic neuritis, affecting both eyes. The cause was not certainly known, syphilis and excessive use of alcohol being denied. There had been distinct abuse of tobacco during several years. He was subjected to vigorous and varied treatment during seven months without much effect. The visual fields changed frequently towards the contraction of optic atrophy, but reversal existed only for a short time.

The clinical notes just read have been brief, but the cases were studied with considerable care, and I think may be grouped as follows:

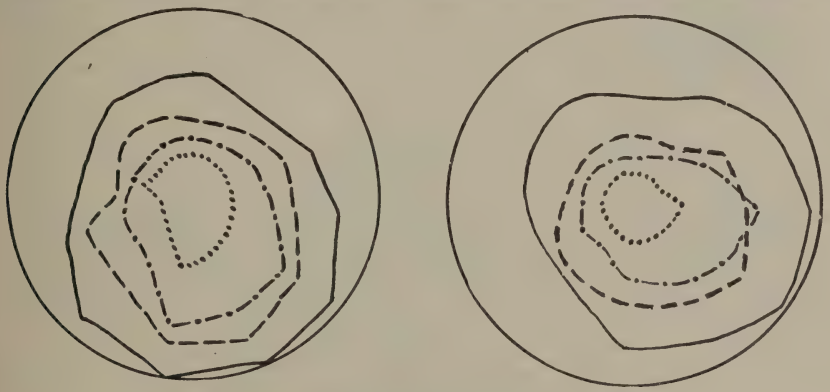
One of pure ocular hysteria with marked reversal in the field of the affected eye only.

One of general hysteria with some ocular symptoms, but with the reversal confined to the field of the unaffected eye.

Two of hysteria appearing subsequent to serious accidental injury, with bilateral reversal in both cases.

One in which a mild infantile hemiplegia was associated with hysterical contractions, reversal showing in one eye only, and one of mild hysteria associated with neurasthenia, the partial reversal being unilateral. Making six cases in which the diagnosis can be made with certainty, having been confirmed by neurological examination in all but the first case.

There were three cases of central scotoma of the alcohol-tobacco type, with reversal in one or both fields, and two cases of optic nerve



Left. CHART XIII. Right.

degeneration, with reversal in one of both fields, making five cases in which, added to the more serious damage by toxic influence, the peripheral fields indicate the presence of hysteria as a secondary result. Finally, there were two cases of intraocular disease in which hysteria may be confidently excluded.

In the light of our present knowledge, I may express my own belief in this matter by the following conclusions:

(1) Moderate contraction of the visual field *alone* is not conclusive.

(2) Extreme contraction in which the field for white or form suffers relatively more than the color fields, suggests very strongly the presence of hysteria.

(3) Complete reversal, and persistent partial reversal, when of considerable extent and not explained by organic lesions, are almost certain evidences of the hysterical state.

RECENT INSTRUMENTS OF PRECISION FOR THE MUSCULAR AND TACTILE SENSATIONS.[1]

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Muscle Reading.

Some explanation of muscle reading and like phenomena may be suggested by experiments with the digitalgraph (Fig. 1) and the automatograph (Fig. 2).

Figure 1 represents an instrument for recording the unconscious movements of the finger, designated by Dr. Delabarre, of Brown University. The movements of the finger are communicated by two cords,

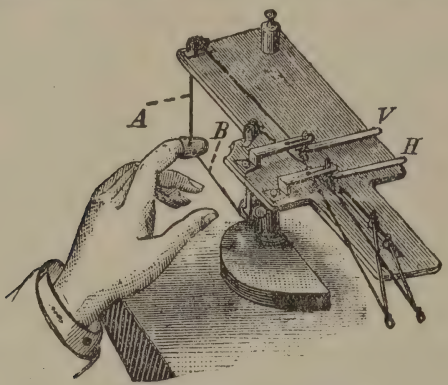

Fig. 1.—Digitalgraph. (Delabarre.)

A and *B*, to two rods, *V* and *H*, on which can be fastened markers to make tracings upon a revolving cylinder. The rods *V* and *H* are held in a state of tension by rubber bands, which react in such a way as to cause every horizontal or vertical movement of the finger to be recorded.

The Automatograph.

The automatograph (Fig. 2) below, designed by Professor Jastrow, of the University of Wisconsin, is an instrument for the study of involuntary movements. It consists of a wooden frame, *B*, mounted on three adjustable brass legs, raising it from the table a little, and enabling one to make the plate glass, *E* (fifteen inches square), exactly level. Three glass balls and polished spheres, three-fourths of an inch

in diameter, are placed in triangular form upon the plate glass; a very light crystal plate glass (fourteen inches square) rests upon these balls. This crystal plate is mounted in a light frame. A piece of paper is placed upon the plate to hide the balls; the ends of the fingers are lightly rested upon this paper. The least movement of the hand slides the upper plate upon the balls. To the light frame of the upper plate, *A*, is fastened a small rod ten inches long, upon the end of which is a cork, *C*, pierced by a small glass tube. In this tube is a glass rod, fitting the tube snugly. The fine point to this rod traces every movement of the hand exactly. A piece of smoked paper, *D*, is placed over a glass plate to receive the markings of the rod or pointer, *F*. A large screen is used to prevent the subject from seeing the record. The instrument records all movements in the horizontal plane. Jastrow calls it an automatograph, because it records slight involuntary movements. The

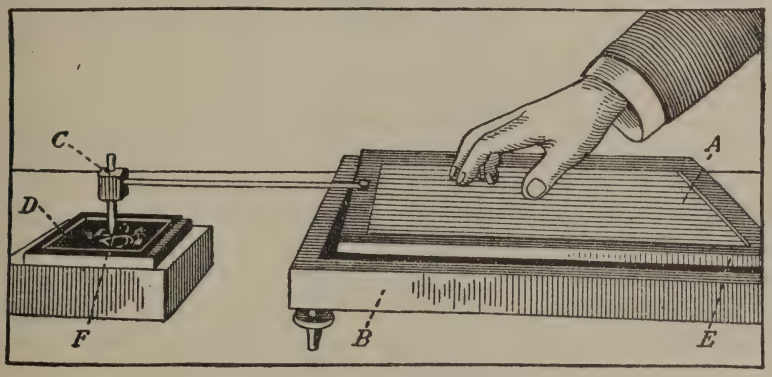

FIG. 2.—Automatograph. (Jastrow.)

results of experiments by Jastrow show that the meaning of the movements recorded depends mostly upon the testimony of the subjects. In general, the subject becomes aware his hand has moved, but seldom knows the direction; the movements, though always involuntary, are sometimes unconscious. The subject is often surprised at the result. This and the digitalgraph of Delabarre suggest many subtle ways in which, by movement, we unwittingly give others an idea of what is going on in our minds. Jastrow intentionally simulated these movements, and the result was measurably different from the genuine involuntary movements.

Details as to instrument may be obtained from the inventor.

TREMBLING OF THE TONGUE AND HAND.

In Fig. 3 is an instrument designed to measure the trembling of the tongue. It consists of a brass frame, *B*, fastened to the mouth by a

braid around the head. The tongue is held against a little disk attached to a tambour, *C*, with a brass tube, *A*, that can be connected with a recording tambour. The instrument measures rather the control of the will over the movements of the tongue.

In order to measure the trembling or movement of the hand or arm the instrument in Fig. 4 has been devised. It consists of a rubber membrane, *M*, fastened to a small shallow brass basin, *C*, making a tambour. A brass disk, *D*, is glued to the membrane, *M*, and on this

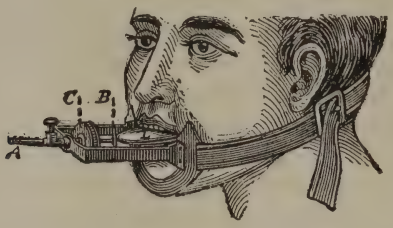

FIG. 3.—Instrument for measuring the trembling of the tongue.

disk is a brass rod, *T*. Different weights of five, ten, etc., grammes can be screwed upon the rod, *T*. A brass tube passes through the handle, on the end of which can be fastened a rubber tube, *K*, connecting with a recording tambour. Any movement of the hand or arm up and down causes the weight to press upon the membrane, *M*, which sends a wave of air to the recording tambour.

Fig. 5 is a combination of instruments to record the movements of tongue, finger, lips, etc. The apparatus comprises a cylinder, *E*, re-

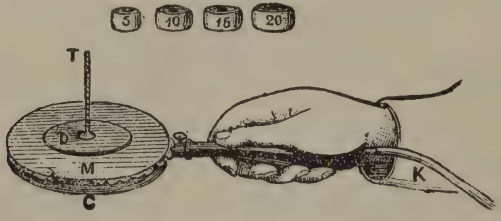

FIG. 4.—Instrument to measure the trembling of the hand and arm.

cording tambour, *A*, connected with another tambour, *D*. A light rod, *T*, is connected with this second tambour, *D*. At the end of this rod, at *K*, is tied a small cord, running on a pulley, *P*, which is fastened to a small brass rod, *F;* this rod slides up and down freely in a brass tube. The purpose of this is to obtain a state of equal tension of the cord for all experiments, by having the cord hold the pulley, the weight of which is constant. As soon as the tension is obtained, a button, *N*, is pressed and the pulley is held firm, suppressing weight of pulley and cord. Then the trembling of the member is recorded.

Apparatus for Muscular Sense.

The apparatus (Fig. 5) for muscular sense is the invention of Professor Münsterberg, of Harvard University. A strong iron rod, *C*, a little over an inch in diameter, is supported by a heavy iron stand, *a*, into which the rod, *C*, moves up and down, being held at will by the screw *b*. At the end of the rod, *C*, is an iron frame which turns upon

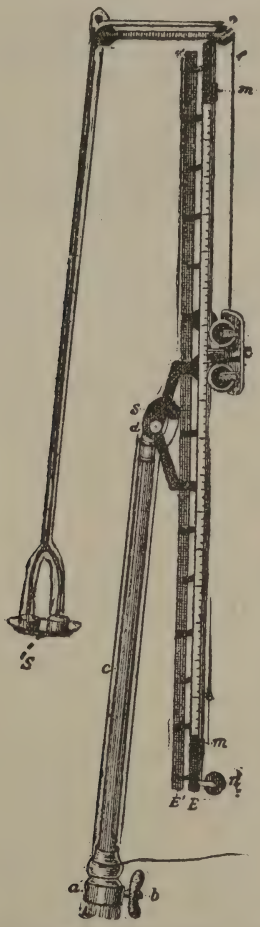

Fig. 5.—Apparatus for muscular sense. (Münsterberg.)

an axis. This frame has on it two small rails, upon which runs lightly a car, *h*, with four small brass wheels. The car is held upon the track at any desired position by a piece of metal, which has upon the end a small wheel running along the under side of a third rail, midway between and a little above the other two rails. An indicator is attached

to the car, showing its position upon the scale, which is 900 millimetres long. To the top of the car is attached a short, hollow, brass cylinder, *l*, into which the end of the index-finger can be inserted. There are two pillars, *n* and *n'*, one at each end of the middle track. A string is drawn over these two pulley-wheels and is fastened at one end to the little car and at the other end to scale pan, *s*, so that the weight of the car can be compensated for or the movement of the car made more difficult or easier.

In a series of experiments with this instrument Professor Dela-

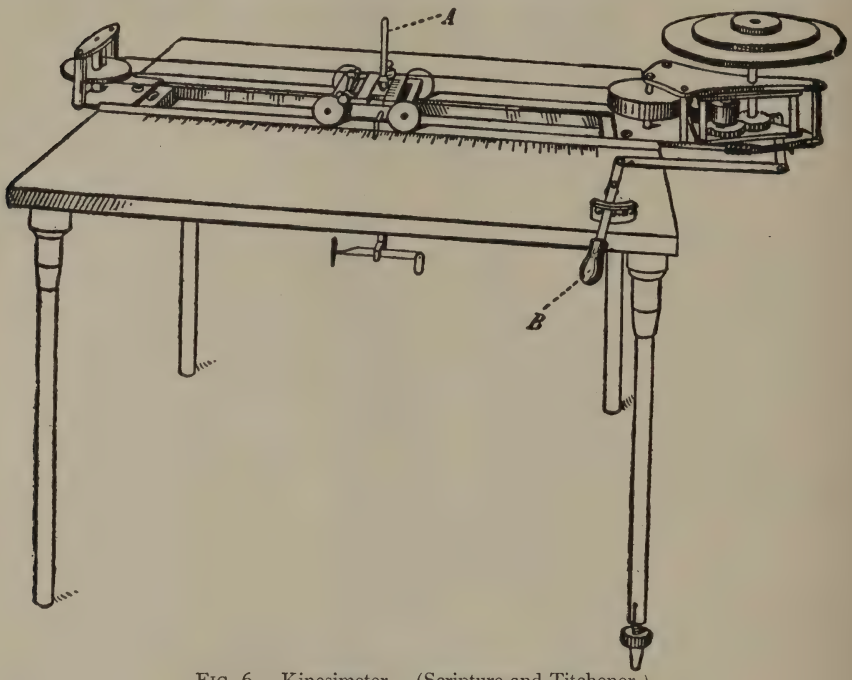

FIG. 6.—Kinesimeter. (Scripture and Titchener.)

barre, of Brown University, determined, among others, the following points:

(1) Those distances are considered equal, the sensible elements of which are considered equal.

(2) Therefore everything which unconsciously increases the sensible elements or the strength of the sensations, causes distances to be over-estimated, so that a short distance will be felt to be equal to a longer distance.

(3) When the person experimented upon is conscious of these causes, which make him over-estimate distance, he strives to correct the error. This correction can easily be too great, so that he falls into an

opposite error of under-estimating the distances on the rails of the instrument.

(4) These principles hold for similar movements, whether they occur in succession or at the same time. When they occur in succession, another factor must be considered,—that is, error in time; for a distance seems longer in memory than when we execute it, providing, of course, any other disturbing factors are eliminated.

The kinesimeter is an instrument to measure the sense of movement upon the skin. The apparatus in Fig. 6 was designed by Professors Scripture (Yale University) and Titchener (Cornell University).

The table is of brass casting, the top of which is perfectly smooth. One of the legs has an adjusting screw. The car, *A*, is made of brass,

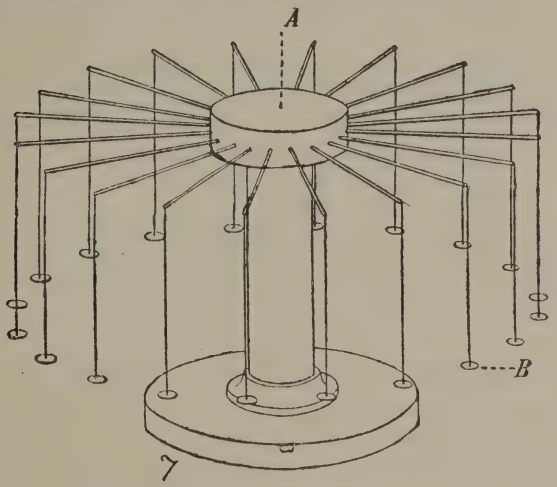

FIG. 7.—Touch-weights. (Scripture.)

nickel-plated; it runs on four wheels, turned on a perfectly true arbor. The bearings are bushings of hardened tool-steel; the holes are ground and lapped, so as to give trueness in running. The wheels are easily taken off their bearings. The horizontal slide of the car, which holds the vertical rod, is easily adjusted. The vertical rod may carry rubber stimulus-point, tube, or whatever is preferred, and is held in position by a brass nut. The rotating power comprises three gears and three friction-rolls. The movement of the car is regulated by a lever. The pressure of the driving-rolls against the principal roll is maintained by two springs, and is adjusted by two nuts on end of a bar connected with the lever. An endless cord propels the car.

Touch-weights for finding the threshold of contact with the skin (Fig. 7) consist of little disks three millimetres in diameter suspended

from a fine cocoon-fibre fastened to a wood handle. The handles are stuck into holes in a round block, *A*, fastened to a pillar and frame. We take out the lightest disk, *B*, and let it touch the skin while the subject's eyes are closed; if nothing is felt, the next heavier disk is used, and so on until the least pressure of the disk is felt. The disks weigh from one to twenty milligrammes. Scripture finds the threshold of sensation for the sense of pressure in an average person to be two milligrammes on the forehead, temple, and back of forearm; five milligrammes for nose and chin, and fifteen milligrammes on inner surface of fingers.

Hair-Esthesiometer.

In order to produce very slight pressure upon the skin, Professor von Frey, of Leipzig, has employed hairs of different size and thickness. The hair-esthesiometer (Fig. 8) enables one to produce various

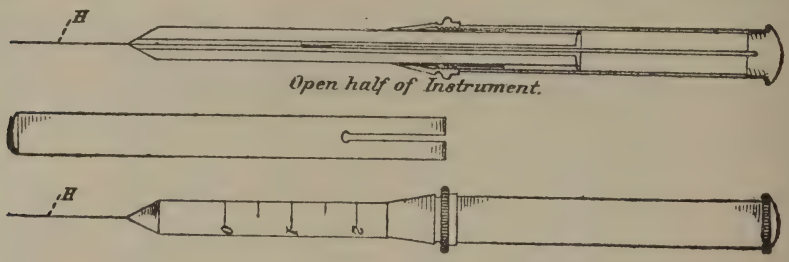

Fig. 8.—Hair-esthesiometer. (Von Frey.)

degrees of pressure with the same hair. The hair, *H*, is in a capillary tube, and a longer or shorter portion of the hair can be made to come out of the tube; a graduated scale shows the distance or the length the hair projects from the tube. The less the distance the hair projects the greater the pressure exercised by the hair. The hair is pressed vertically against the skin until it bends.

The Increasing Population of England.

During the week ending January 14, in thirty-three of the largest English towns 6580 births and 3995 deaths were registered. In London the death-rate was 18 per 1000, and averaged 18.5 in the thirty-two provincial towns. The lowest death-rates in these towns were 11 in Brighton, 11.8 in Derby, 12.6 in Cardiff, and 12.9 in Leicester and Hull; the highest rates were 22.4 in Manchester, 22.5 in Gateshead, 23.2 in Oldham, and 24 in Sunderland.—*Medical Record.*

ALUMNI NOTES.

The Museum of Archeology.

The exterior work on the new Museum of Archeology is practically completed, and all that remains to be done is a few finishing touches.

The building is a fine specimen of Italian medieval style, designed by Philadelphia architects, and is the gift of a few wealthy Philadelphians who have the welfare of the University at heart. It was begun in January, 1897, and its cost is half a million dollars. Located on the south side of Spruce Street, west of Thirty-third, the main part commands a view of Franklin Field, and the site is an ideal one for a museum, and even now attracts attention from passers-by.

The material used is a coarse red brick, relieved at the arches of the windows and at other odd places by marble wings. There are also a few massive pieces of carved oak, with Egyptian designs, let into the outer walls. The building is constructed on three sides of a quadrangle, the Spruce Street side being open and the eastern and western wings extending so that the entire structure covers about 260 square feet of surface. Vast as it appears, it is only one-fifth of the space called for in the general plans for the extension of the University's archeological museum. There are two walls surrounding the building, both of which are used to support terraces, and it is through these terraces that the visitor enters the court-yard. The stately main entrance is the first thing that commands one's attention, and it is worthy of note that nothing approaching it has ever been attempted in this country, and this is also true to a great extent of the entire edifice. Directly in front of the entrance is a pool of water in a basin of chiselled stone, and leading to this are various pathways, apparently cut through beds of flowers, as well as other specimens of the landscape-gardener's art.

The wide marble stairs of the main entrance rise on either side at a right angle to the building to a landing. From this they ascend to the second floor, and here the visitor finds the central or main floor. Through this doorway, the frame of which is constructed of Italian marble, the museum is entered by a flight of descending steps, which reach to the level of the terrace. The first or central hall, which is to be used entirely for exhibition purposes, has a floor space of 3000 square feet. Two more exhibition halls are on the southern side of the building, and in the eastern wing there is a third, the combined capacity of these last being 6000 square feet. The floors are laid with Terraza

mosaics, the base being of Tennessee marble. As might be expected, the ceilings are very high, and little wood being used in the construction, the edifice is as nearly fireproof as it is possible for a structure built by man to be. As has been stated, the present building is only a beginning, and as there are now enough specimens in the possession of the University to comfortably fill it, it is to be hoped that the work will soon be begun on the extensions.

The Laboratory of Hygiene.

The south wing of the Laboratory of Hygiene is being torn down for the purpose of enlargement. The new addition will be twice as large as the old one. The entire first floor will be occupied by a lecture-room, with a seating capacity of 200. The second floor will be used as a class-room for the study of elementary bacteriology in the undergraduate courses, in both the medical and dental departments. It is expected that the improvements will be completed before the opening of the session in October.

Dr. Edgar F. Smith elected Vice-Provost of the University of Pennsylvania.

At a recent meeting of the Board of Trustees, Dr. Edgar F. Smith, professor of Chemistry in the College, was elected vice-provost of the University to fill the vacancy caused by the retirement of Dr. George S. Fullerton.

Chief-Marshal of the Commencement-Week Exercises.

Provost Harrison has appointed Mr. Joseph C. Fraley, of the Class of '68 (College) to act as chief-marshal during commencement week. The exercises of the week are to begin with baccalaureate sermon on Sunday, June 11, and close with the Commencement, June 15.

Deputy Quarantine Physician.

Governor Stone has appointed Dr. Louis T. Kennedy, of the Class of '95, deputy quarantine physician at Philadelphia.

The Resignation of Dr. Penrose.

At a recent meeting of the Board of Trustees, Dr. Charles B. Penrose tendered his resignation as professor of Gynecology.

Necrology.

Dr. Joseph T. Kirkbride died in Philadelphia on May 4, 1899. Dr. Kirkbride, who was the eldest son of Dr. Thos S. Kirkbride, for forty years physician-in-chief of the Insane Department of the Pennsylvania Hospital, was born in 1842. He was graduated from the University in 1872.

EDITORIAL.

ON THE QUESTION OF REMOVING THE APPENDIX AT THE FIRST OPERATION IN ALL CASES OF APPENDICULAR ABSCESS.

It would seem impossible to say anything new on the subject of appendicitis at the present time. However, it doubtless serves a useful purpose to repeat, occasionally, the principles that are followed by the most representative members of the profession. Such repetition is especially necessary, when views are advanced that are not in accord with these established principles. There can be no doubt but that each year witnesses some advance in our knowledge, and it is our duty to note such as are worthy of record, and also to restate those practices that time and wider experience have failed to improve upon.

As regards the subject of appendicitis, the tendency seems more and more to postpone operation until the subsidence of the inflammatory symptoms, in all suitable cases. The advantages of this course are obvious, and have heretofore been stated frequently. After convalescence, the question of the advisability of the removal of the appendix will come up for discussion, and is to be decided upon a careful consideration of a number of factors, among which may be mentioned the number of attacks, the severity of the last attack, whether the recovery after a first attack has been complete, or some chronic symptoms remain, and whether the person resides where prompt and skilful medical and surgical attention is available or not. A rather different valuation is placed upon these various features by different surgeons, but if it be decided to remove the appendix, the operation is easier for the surgeon and safer for the patient " in the interval" as it is called.

There is, however, a class of cases in which the inflammation results in the formation of an abscess. The profession agrees, probably without a single dissenting voice, that these cases should be operated upon as soon as the abscess is detected. This has been, as is well known, the practice for many years. The first indication is, of course, to evacuate the pus, in order to prevent it from breaking through its limiting adhesions and causing fatal peritonitis. In evacuating the abscess, the greatest care should be observed not to infect the healthy peritoneum.

The next question to be decided is, Shall the appendix be sought for and removed? It seems to us that no invariable rule can be laid down, and it is to protest against the adoption of any course that does not take into consideration all of the factors in the case that these comments have been written.

The opposite view has been advanced again in a recent communication to one of our best medical journals. The author says, "If the abdomen *is opened* to empty an abscess and cure peritonitis, then the appendix should be removed at the same time, even if much searching is necessary to find it. If it is left behind, it will be a source of infection, and its presence may, and very likely will, be the cause of a subsequent and, possibly, fatal attack." Again, "Every active surgeon can recall cases where persons have recovered from attacks of appendicitis because abscesses had been opened and drained. Subsequently many of these persons have been so uncomfortable that life has not been worth living, and they have clamored for relief, which has not been obtained until the appendix has been removed. In these cases life is a burden until the abdomen has been relieved of the presence of the appendix. Every surgeon can tell of one or more such cases.

"Other cases can be recalled where an operation has been done and the appendix has been left in the abdomen and the sufferers have been apparently cured, and yet a second or third attack has been fatal. It is safe to say that the appendix might have been more easily and safely removed in the first attack than in the fatal one. These fatal attacks may come on months or years after the first one."

He supports his position by quoting two illustrative cases:

"A young man was attacked with appendicitis in Mexico. As a last resort, he started in a special car to reach this city [Boston] and get relief. He reached St. Margaret's Home in a state of extreme exhaustion and emaciation. An enormous abscess occupied his right lumbar and iliac regions. This was opened at the most dependent point, and several pints of offensive pus and much sloughing tissue were removed. He recovered, gained much flesh and strength, and became robust, so that in the autumn he weighed more than ever he had done in his life, and was ruddy looking and very active. He returned to Mexico, was attacked in the same way in the following summer, tried to reach Boston, but died in the cars on the way. I ought to have removed the appendix after his recovery, before he went back to Mexico. . . .

"A machinist was brought to the Massachusetts General Hospital and gave the following history of his past illness: He was taken with symptoms of appendicitis October 9, 1897. When first seen, a week from his seizure, his right thigh was flexed to an angle of 45 degrees and

there was a "cake" in the right iliac region, tender to the touch. His temperature was 101° F. Four days later an extraperitoneal abscess, containing about three ounces of pus, was emptied. A gauze wick was left in. Subsequently the abscess drained poorly and various methods of drainage were practised and the abscess-cavity was frequently syringed. At length, six weeks later, the wound healed. The man went to work in about ten days, and after working for three days became feverish, nauseated, and had a chill and general abdominal soreness, right lower quadrant of abdomen more prominent than left, increased muscular rigidity, and a tumor in the site of the former operation. Temperature 102.5°. The abscess was again opened, outside the scar of the previous operation, and about six ounces of foul-smelling pus were evacuated. The abscess was thought to be entirely extraperitoneal. A long sinus was found running under the cecum, too long to be explored to its depths with the fingers, and another ran into the pelvis. No trace of the appendix was found. The abscess-cavity was drained by gauze. The temperature became normal the day after the operation, and at the end of six weeks the patient was entirely well except for a superficial sinus, which he dressed himself.

"Two months later the man was brought to the hospital, when he came under the care of the author for the first time. He had been working steadily and had gained flesh and strength. Two days before entrance he began to have some slight pains, and twenty-four hours later vomiting set in and has continued ever since. Bowels loose, pain persistent, with agonizing paroxysms. No definite point of extreme local tenderness. He found most ease by lying on his side with his knees drawn up; he was in great pain, crying out spasmodically.

"A three-inch incision was made between the two scars of the former operations and came upon a loop of small intestine much injected. On drawing this aside an abscess-cavity was opened and foul pus came out; several other pockets containing offensive pus were emptied, the intestines were injected and here and there covered with fibrinous exudate. The appendix was at length found doubled on itself so that the base and tip lay side by side, and at the point where it was doubled was a small perforation with gangrenous edges.

"The appendix was tied off and removed. The abdomen was washed out with salt solution and a gauze drain left in the wound going down to the stump of the appendix. For the next three days the patient was comfortable and the temperature came down to the normal point. In another twenty-four hours there was distress and vomiting with a rapid and weak pulse. No pus could be found in the wound or in the abscess-cavity. He was taken away by his wife five days after the last operation and died soon after reaching his home.

"I think this last case a typical one as illustrating the wisdom of the dictum that the appendix ought to be removed at the first operation."

These reports have been somewhat abbreviated, but the main points remain.

Let us examine first the arguments, and then the cases. It is true that "every surgeon can tell of one or more cases" of patients who have recovered from attacks of appendicitis because abscesses had been opened and drained and who subsequently were not well until the appendix was removed. For every such case, however, the surgeon can doubtless recall at least a dozen who have been permanently cured by the same procedure. The rule certainly is that such abscesses, if properly drained, heal and remain healed, the appendix probably becoming obliterated. In certain cases so treated, as the author states, a second or third attack may occur, and sometimes has been fatal. This is admitted, although in very rare instances. Is it correct to say that the appendix might have been more easily and safely removed in the first attack than in the fatal one? We reply, by no means invariably, and it seems to us that the first case cited supports this view. The patient came to operation "in a state of extreme exhaustion and emaciation." "An enormous abscess was opened and several pints of offensive pus and much sloughing tissue were removed." In such a case the search for the appendix would usually be very tedious and time-consuming, and there is certainly ground for a reasonable doubt whether this patient would have survived such an operation. We agree that under all the circumstances it would have been proper "to have removed the appendix after his recovery, before he went back to Mexico," but this is quite a different matter from removing it at the first operation regardless of the patient's condition.

The second case may have been a typically suitable one in which to remove the appendix at the first operation. The report, at least, does not reveal any positive reasons to the contrary. This does not prove that every case should be so treated, it merely indicates that such is the proper treatment under certain conditions.

In the March, 1896, issue of the MAGAZINE Dr. J. William White discusses this question, and states his position in the following words: "If there is a circumscribed abscess, it is poor surgery to insist in every case and at every period upon finding and taking away the appendix in the face of all obstacles. In many cases of circumscribed abscess, and especially in those in which the appendix is bound down by adhesions in the depth of the wound, the surgeon should be content with evacuation, irrigation, drainage, and packing with iodoform gauze. Persistent search for the appendix and attempts at its removal in these

cases are attended with such danger of opening the peritoneal cavity that they are not to be recommended." In addition, he obtained the views of Drs. McBurney and Bull, of New York, Senn, of Chicago, Halsted, of Baltimore, and Richardson, of Boston. Without exception, it was stated that it was not advisable to remove the appendix in every case of abscess. If we judge correctly, the same views prevail to-day. It is not to be supposed that these operators never remove the appendix at the first operation. On the contrary, they all constantly do so. It is against the indiscriminate, blind adherence to a fixed rule in contradistinction to an intelligent study of the case to which we wish to object, and while we would encourage every effort to attain to the ideal, we resolutely hold that the life of the patient should be the surgeon's first consideration. He has no moral right to expose his patient to grave risks, in order that he may escape a future illness, the liability to which is but a few per cent. The attitude of the men whose names we have mentioned, as we gather it, is to evacuate the abscess, *secundum artem*, then to investigate the existing conditions. If the patient seems able to stand a more prolonged etherization, and if the inflammatory mass is within safe working distance of the abdominal incision, an attempt is made to find and remove the appendix, but the effort is abandoned if it appears to endanger the patient's life, either because of the time that would be consumed or the local disturbance that would be unavoidable.

The writer first alluded to cites a third case, that of a boy upon whom he operated in January, 1886, in which the appendix was not removed. It is stated (1899) that "the boy has grown up strong and well." The evidence afforded by this case should not be overlooked. Every surgeon must have had many similar experiences. On the other hand, it is sad to reflect how many patients have died as the result of an ideal operation, who might have survived and lived in comfort with an obliterated appendix, had the abscess been simply opened and drained.

Cause of Napoleon's Death.

Napoleon Bonaparte died at the age of 52, of cancer of the stomach, in May, 1821. His father had died at the age of thirty-eight, of the same disease. Napoleon was the son of a very young mother. She was possibly not sixteen when he was born, and certainly not twenty. Cancer is, I believe, more common in the children of aged parents than of young ones. We must, however, here bear in mind the inheritance and also the depressing and annoying conditions under which Napoleon's last years were passed. There can be little doubt that mental depression disposes the tissues to cancerous changes.

MEDICAL PROGRESS.

MEDICINE.

UNDER THE CHARGE OF

JAMES TYSON, M.D.,

ASSISTED BY

M. HOWARD FUSSELL, M.D., AND A. O. J. KELLY, M.D.

Kernig's Sign in the Diagnosis of Meningitis.

Netter (*Massachusetts Medical Journal*, March, 1899, and *Bulletin Médical*) speaks of the value of the sign described by Kernig, of St. Petersburg, in the detection of meningitis. Netter has noted it in forty-one out of forty-six cases. The patient is examined first in the dorsal decubitus and then sitting. In the first position it is very easy for the patient to extend the leg completely; in the sitting posture, however, the leg can no longer be extended completely. In very marked cases it cannot be extended beyond 90 degrees, and in all cases not beyond 135 or 140 degrees. But as soon as the patient lies down, complete extension is again easy. This phenomenon has not been observed except in meningitis.

Endocarditis.

Harbitz (*Deutsche medicinische Wochenschrift*, February 23, 1899; *British Medical Journal*) divides endocarditis into infective and non-infective: (1) Infective endocarditis includes the cases set up by micro-organisms. In forty-three cases of this kind, seventeen were due to the streptococcus, five to the pneumococcus, eight to the staphylococcus, and three to other microbes. The remaining ten were examples of the healed disease. These cases could be thus further subdivided: (*a*) Those which run the course of a rapidly developing pyemia, with high fever. At the necropsy there are found a diphtheroid deposit on the valves, ulcerative and necrotic processes in their substance, multiple abscesses in the skin, heart muscle, spleen, kidneys. The endocarditis represents one of the many localizations of the specific virus, which is mostly the pyogenic staphylococcus. (*b*) Those in which the endocarditis predominates and appears to be the chief focus of the disease. The disease may last for months. Renal complications are frequently present. Small warty and larger polypoidal excrescences are found on the valves. Ulceration is absent, and the lesions look older. The excrescences are found to swarm with microbes; yet there are no secondary abscesses, the numerous infarcts being white and firm. All transitional states between these two subgroups may be noted. In sixteen cases belonging to the second subgroup the streptococcus was found in nine and the pneumococcus in four. This more chronic and relatively benign type of infective endo-

carditis has hardly received the attention which it deserves. It has also been taken for rheumatic endocarditis. Three illustrative cases are given in full. Harbitz gives his reasons for looking upon the ten cases above referred to as healed. In one case cultures of the staphylococcus were obtained from five cubic centimetres of the blood two weeks before death, yet after death no microbes could be grown from the valves. (2) Non-infective endocarditis. In six cases of rheumatic endocarditis the author found no microbes. In nine fatal cases of tuberculosis, excrescences were found on the valves, but no growth could be obtained from them. Harbitz looks upon it as very doubtful whether the tubercle bacilli causes endocarditic processes. In cases of Bright's disease and carcinoma, in which there was endocarditis, no microbes were found.

Diabetes Mellitus in Children.

Townsend (*Boston Medical and Surgical Journal*, May 11, 1899) reports five cases of diabetes in children, the youngest being 1 year and 11 months, and the oldest 9 years. He states that the rarity of the disease in children is shown by the fact that of 360 cases of diabetes mellitus collected by Pavy only eight were under 10 years of age, and Prout and Meyer, in a series of 700 and 380 cases respectively, each found only one case under that age. In the paper by Fitz and Joslin on the cases at the Massachusetts General Hospital, between 1824 and 1898, 172 cases in all, there were only three under 10 years of age, and these are included here, two of them coming under my observation.

Stern collected a series of 117 cases in children. Wegeli has collected 108 cases of diabetes in children. The youngest children in his list are three, reported by Bell, Caron, and Nichius respectively, each aged 3 months. The briefest course of the disease was in a child, aged 2 years and 9 months, reported by Cuopf, who had symptoms for only four days, and died in coma twenty-four hours after the disease was recognized. The longest duration of any case was four and a half years.

Diabetes mellitus in infants is to be distinguished from the temporary glycosuria, which is sometimes seen in infants as a result of digestive disturbances, and is not of serious import. Grösz showed that milk-sugar can be assimilated by healthy breast-fed children to the extent of fifty grains per pound, which is more than twice as high as in the case of adults. This limit is, however, easily lowered, especially by digestive disturbances, and the glycosuria in such cases is believed to be due to a lowering of the assimilative limit and partly to the action of intestinal bacteria.

The author concludes that a general picture of diabetes mellitus in children, as seen in these cases, may be sketched as follows: The initial symptoms are apt to be incontinence of urine, due to polyuria; nervous irritability; great thirst. Strength, flesh, and color may sometimes be retained until nearly the end. A gain of weight and height, even, may occur, without any amelioration of the disease. The disease goes on to a fatal issue much more rapidly in children than in adults, the duration in my cases varying from two to fourteen months. Death is generally preceded by coma.

Splenic Anemia.

Alfred Coles (*The Blood*, London, 1898) gives splenic anemia a definite position among diseases of the blood. The disease has hitherto received indif-

ferent recognition, and its literature is scant. Coles describes splenic anemia as characterized by marked increase in the size of the spleen, progressive anemia, an absence of leucocytosis, and a similar absence of enlargement of the lymphatic glands. Such a definition excludes leukemia on the one hand, and the ordinary forms of Hodgkin's disease on the other. The disease may be characterized in addition by attacks of colic-like pain in the left hypochondrium, nausea, vomiting, and diarrhea. These occur in paroxysms, and are generally followed by a shorter or longer interval in which the patient feels comparatively well. The spleen is invariably enlarged, and may reach the level of the iliac crests. It is uniformly increased in size, and its shape is unaltered. The liver may be normal or may be enlarged. There may be jaundice. Epistaxis may be an early and prominent symptom. Splenic anemia is distinguished from Hodgkin's disease by the entire absence of any enlargement of the lymphatic glands. The examination of the blood is not pathognomonic. The changes in the blood may be similar to those in Hodgkin's disease. On the other hand, the blood examination is important, as the disease cannot be differentiated from leukemia without it. The red blood-corpuscles frequently fall to two and one-half million per cubic millimetre, and may be further reduced. Microcytes may be present. Hemoglobin is reduced to a much greater degree relatively, and accordingly the color-index of the individual corpuscles is very low, even as low as 13 per cent. The leucocytes are usually normal in number, and no characteristic changes in the differential count are described. Splenic anemia progresses to a fatal termination in from six months to two years. Its early differentiation from other pathological blood conditions is important in view of treatment. Splenectomy has resulted in cure in three cases of splenic anemia. This operation is almost invariably followed by death in leukemia.—*Medical News,* April 29, 1899.

The Problem of Typhoid Fever in the United States.

Osler, in an address delivered before the Medical Society of the State of New York, February 1, 1899, calls attention, first, to the labors of the American physician in clearing up the problems of the continued autumnal fever, and calls particular attention to Nathan Smith's medical essay on "Typhus Fever," which was published in 1824, and also to the work of Gerhard, Shattuck and Stillé, who studied in France, and came to the United States and elucidated Louis's observations. He also alluded to the physicians of this generation, and says that the great zeal with which typhoid fever has been studied during the past thirty years by the physicians in this country has been beyond all praise.

He says that the etiology has been worked out as to justify the hope that the remaining gaps will soon be filled.

The diagnosis has been simplified and the enlightenment on the question of treatment has been followed in all directions. The nursing and diet are universally recognized as the most essential elements, and we have abandoned, in great part at least, the active measures of our grandfathers,—bleeding, vomiting, and purging. But all of these advances sink into insignificance before the triumphs of sanitation in the prevention of a disease, and one demonstration stands out in clear relief above all others, *with clean soil and clean water typhoid fever disappears.* In cities which stood at the head of the list in the mortality from the disease, such as Munich and Vienna, the typhoid fever rate was dropped to the lowest known percentage after the introduction of drain-

age and good water-supply. That imperfect drainage and a polluted water-supply mean a high mortality rate from typhoid fever is the very alphabet of sanitary science.

In scores of instances carelessness in one or other of these points has led to wide-spread epidemics.

He says that the epidemic of typhoid fever among the soldiers in the fall of 1898 was nothing more than a slight extension of the judgment upon criminal neglect of sanitary laws. The number of soldiers who died of typhoid fever after the war was a bagatelle in comparison with the total annual deaths from the disease in this typhoid-stricken country.

Throughout the length and breadth of the land typhoid fever prevails so extensively in township and country, in village and city, that any large body of men, congregated together, is almost certain to become infected.

He calls attention to the epidemic now present in Philadelphia. By quoting the figures for the week of January 28, 1899, he says that there were forty deaths from typhoid fever and 427 cases reported, and that during last year there were from 5000 to 6000 cases of typhoid fever, 600 of which were fatal.

In Baltimore 200 people die annually of typhoid fever, and in Washington for the last seventeen years there has been an annual average of 1500 cases of typhoid fever.

He says that the prevalence of the fever throughout the United States, in the smaller village and country districts, is still more serious, and that in Indiana 655 persons died in the counties of the State from typhoid fever for the year ending September, 1897.

In New York the total number of deaths from typhoid fever in 1897 was 1585. He says that great epidemics are the only great sanitary reformers, and that now typhoid fever really assumes pandemic forms.

The solution of the problem, he thinks, is easy. What has been done in many parts of Europe can be done here; the practical conviction of the people is all that is necessary. We only demand that the people shall scour the soil on which they live and cleanse the water which they drink. The problem may be solved when every city in the Union has a supply of pure water (including ice) and is properly drained; and, secondly, when suburban and rural hygiene is systematically organized.

Inductive Mediastino-Pericarditis in an Infant.

Bfumlleld (*Lancet*, December 31, p. 1765) presents the following case as an excellent example of a rare condition which has received but scanty recognition. The first case seems to have been described in 1854, by Griesinger, and up to the present about twenty-five cases have been recorded. Their etiology is uncertain, though it is not improbable that many are associated with tubercle. It is possible that some originate from a septic mediastinitis.

A male infant, aged 15 months, was admitted October 1, 1896. In August there had been bronchitis, and in September swelling of the face and legs. The case was sent to the hospital as one of meningitis, owing to a peculiarity in the child's cry. The infant was pale, but otherwise apparently healthy; he cried constantly unless he was nursed, but he did not appear to be in pain. The temperature was 99° F., the pulse was 80, regular and of fair size, and the respirations were 20. The tongue was clean.

The area of cardiac dulness was enlarged upward, reaching to the upper border of the upper second left intercostal space; it extended also beyond the middle line of the sternum, except over the manubrium. The heart-sounds were normal. The feet and legs felt cold and pitted slightly on pressure. There was no albuminuria. The infant took his food and slept well. He usually sat up; while sleeping he lay on his back.

The condition remained unchanged, except that on some days there was blueness of the lips and ears, until November 3. There was then an obvious amount of fluid in the abdomen; the arms and legs were cold and blue, and the legs were considerably edematous. Distention of the veins of the neck was noticed. On the 10th the edge of the liver was palpable two and a half inches below the costal margin, and on the 23d there was extreme ascites with much edema of the abdominal wall. The urine contained phosphates and about one-eighth albumin. On the 30th there was much diarrhea, and on December 2d the infant died with all symptoms of cardiac dilatation.

The necropsy showed the mediastinal tissues greatly thickened and adherent. The anterior mediastinal glands were enlarged and presented foci of caseation. The left lung was adherent to the chest wall at the apex, and over the posterior surface of the lower lobe was some thickened and adherent pleura. The pericardium was about three-quarters of an inch thick, fibrous, and adherent everywhere to the heart, and the fibrous tissue spread upward around the great vessels. Firm adhesions unite the pericardium with the thickened anterior and posterior mediastinal tissues. The left pleura was adherent to, but separable from, the pericardium. Both ventricles were dilated and hypertrophied. There was no evidence of tubercle. The abdomen contained four quarts of ascitic fluid. The liver was large, "nutmeg," and fatty; the kidneys and spleen showed changes due to venous engorgement.

Dr. Thomas Harris, in 1895, published a monograph on mediastino-pericarditis. The youngest child mentioned was 2 years of age. The diagnosis is difficult. In the present case, except an increased area of cardiac dulness and an occasional lividity of the extremities, there was nothing for weeks to lead any one to suspect any affection of the heart.

Peculiar Cardiac Physical Signs in Phthisis.

J. Burnet's (*Lancet*, November 19, p. 1323; December 10, p. 1548; and December 31, p. 1816) attention has recently been called to the presence of cardiac impulse and sounds on the right side of the chest, although on post-mortem examination the heart was found in its normal position. In the cases referred to there existed cavity-formation at the upper part of the right lung, with consolidation of the lower lobes. At first sight it seems difficult to account for the peculiar phenomena observed. It is a well-known fact that during respiration cardio-pneumatic sounds are often produced which simulate closely organic cardiac murmurs, and, indeed, are often mistaken for these. They may be heard either in cardiac systole or in cardiac diastole, and at times during both movements of the heart. Where there exists a cavity in the lung the sounds produced in that cavity may give rise to similar cardio-pneumatic murmurs. In the cases already referred to the cavities present were situated close to the cardiac organ, and, moreover, had, so to speak, a bridge of consolidated lung connecting the heart with the cavity. In this way the cardio-pneumatic murmurs were conducted downward from the cavity to the inter-

costal space on the right side, over which they were audible. In a similar manner the impact of the heart was rendered visible and palpable on the right side of the chest by this combination of cavity and consolidation. It would appear that the presence of consolidated lung cannot of itself cause this conveyance of cardiac impulse, else it would be observed in cases of lobar pneumonia; there must also be cavity-formation present above the consolidated area. It is the presence of a cavity that is one of the *sine qua nons* of cardio-pneumatic murmurs in phthisis, and it is likewise the essential in the conveyance of cardiac movement of the right side of the chest. During the stage of cavity-formation in phthisis he has frequently discovered the presence of these so-called cardio-pneumatic sounds, not only in the region of the cavity, but at an entirely opposite part of the chest, and has always observed that in such cases there was a well-defined bridge of consolidated lung substance existing between the lung cavity and the area, other than that of the cavity itself, over which these murmurs were audible. The cardiac impulse is conveyed in a similar manner, the transmission being due to a peculiar combination of cavity and consolidation in direct proximity to the heart.

Constitutional Effects of Superficial Burns.

Bardeen C. Russell (*Johns Hopkins Hospital Reports*, Vol. vii, No. 3, p. 137, 1898). In the case of five children so severely burned that they survived only a few hours, the pathological changes were swelling of the liver and kidney, softened and enlarged spleen, and, above all, swollen lymphatic glands and gastro-intestinal lymph-follicles; the hyperemia of the thoracic and abdominal organs was moderate. In the blood the most striking change was a considerable fragmentation of the red corpuscles in the spleen, and some in the liver; thrombi, except in the skin, were uncommon. The lymphatic glands from the thorax and abdomen showed edematous swelling and focal changes in and about the germinal centres.

But little attention has been paid to the lymphatic glands in superficial burns. Russell found that wherever lymphocytes were, from the small nodules in Glisson's capsule of the liver to the largest lymphatic glands, these alterations appeared; apparently the first stage was edema, followed by swelling of the lymphocytes in the germinal nests with vacuolation and nuclear changes. The germinal centre by this means expands until it reaches a size large enough to be visible to the naked eye. The protoplasm of the cells in its neighborhood act as phagocytes, taking up the fragments of protoplasm and nuclei. In the Malpighian corpuscles of the spleen the same changes are to be recognized.

How are these changes to be explained? Russell assumes that toxins, elaborated by the destruction of the superficial layers of the skin, pass into the circulation, and, carried by the blood into the lymphatics, escape into the plasma towards the centre of the follicle, where the arteries of the lymph-glands break up into capillaries; this rapid flow of plasma gives rise to the edematous swelling, and tends to sweep the lymphocytes into the perifollicular lymph-sinuses. Nearly identical changes have been found in the lymphatic glands of children who have died from various infective diseases, and similar lesions can be produced in animals by the injection of ricin, abrin, and similar organic poisons. Death evidently is the result of an acute toxemia.—J. G. Adami, *Montreal Medical Journal.*

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

ASSISTED BY

CHARLES H. FRAZIER, M.D., AND GEORGE M. PURVES, M.D.

The Local Distribution of Cancer and Cancer Houses.

D'Arcy Power (*Practitioner,* April, 1899) draws attention to particular instances occurring in England in which cases of cancer are repeatedly found in certain districts, villages, houses, and even single rooms.

The district which he describes consists of sixty square miles of marshy lands, with a scanty population, who mostly live to an advanced age. There is no tendency for the same families to intermarry in different generations, but there is a tendency to the occurrence of insanity.

From 1872 to 1898 173 cases of cancer have been observed, and although this number is not very imposing, yet the manner in which the disease was distributed is worthy of attention. The disease appears to cling to certain spots and groups of buildings irrespective of their size and age. It has occurred in new buildings of brick as well as in the old thatched homestead. A single surface well supplied the cottages in most cases; in others each cottage had its own supply of water.

He gives cases showing some remarkable sequences, where people living in houses with cases of cancer have themselves been affected with the disease, and have subsequently died from it.

The conditions present in this district are identical with those which Mr. Alford Haviland has described to be favorable to a high mortality of cancer. "Districts which are characterized geologically by clays and traversed by fully formed rivers that seasonly flood their banks."

It is almost impossible to resist the conclusion that the marshy ground from which the rivers in this district rise, as well as their wooded banks, have some casual connection with the numerous cases of cancer which have been recorded.

It is quite possible to imagine the cause of cancer to be an organism allied to and living under very similar conditions to the malarial parasite, but differing from it in the fact that it had a much longer incubation period, that it attacked tissue in a more decadent condition, that it no longer confines itself to the blood, but that it is capable of penetrating into the tissue, thereby causing a rapid proliferation of the cells,—both epithelial and connective tissue.

The author gives instances of the localization of epidemics of cancer to villages, houses, and even to single rooms, and concludes with the statement that these cases raise a strong presumption in favor of cancer being an infective disease, to which some are much more susceptible than others.

The cause will probably not be found in a given room, house, or water-supply, but will almost certainly prove that there is some intermediate host, whose chances of detection will increase or diminish with the care which is taken to examine the fauna and flora of the districts, where cancer is most prevalent.

Etiology and Histology of Cancer, with Especial Reference to the Recent Work on the Subject.

Plimmer (*Practitioner*, April, 1899) says the first known expression that cancer is an infectious disease dates from 1773, in a discussion in the Academy of Medicine of Lyons, the question then subsided, and it has been only within the last ten years that it has again attained the position of a problem deserving of research.

The first organisms looked upon as being the cause of cancer were bacteria; as early as 1872 Nefeven saw them in cancers. The bacillus which is best known with regard to cancer is that of Scheurlen, isolated in 1887. This was shortly proved to possess no pathogenic properties.

Virchow, in 1851, described cavities in cancer-cells surrounded by a wall and sometimes having a double contour, but not much attention was given to this discovery until after 1889, when Thoma described nucleated bodies, in both the nucleus and the protoplasm, and it was he who called them "parasitic organisms."

The next important step was taken in 1890, by Russell, who described bodies in cancer-cells, which he demonstrated by means of special staining methods, and which he called "fuchsine bodies," on account of their affinity for fuchsine.

It was soon made evident that many of the bodies described by Russell were true parasites, but that also many of them were degenerations, especially hyaline degeneration of the cell substance. In 1892 appeared a paper by Ruffer and Walker, in whose preparations Metchnikoff declared the bodies to be "parasitic protozoa."

The author endeavors to show that cancer has a great likeness to the chronic infectious diseases, and that it is of a chronic infectious nature, running the course and presenting the lesions of such diseases.

(1) The proliferation of epithelial cells is the characteristic mark of cancer, the cells being always derived from epithelium pre-existent in that part of the body from which the cancer originates. A cell from a cancer is not in shape or size quite like its parent cell, and it can find its way into any other part of the body. The difference between a cancer-cell and a normal epithelial cell is principally one of size, and is not a physiological or even a morphological one. As Virchow long ago pointed out, no cell tissue which can occur in our bodies is, in the strict sense of the word, atypical.

As regards the division of the cells, there are often abnormal structures which have to be remembered. The most important of these is that of hyperchromatosis of the nucleus, which condition is caused by some abnormality in the development of karyokineic figure. Then there are cells in which other cells have become invaginated, and these have been mistaken for the bodies to be spoken of later.

There are certain bodies met with in cancer-cells which it is important to recognize: these are bodies which are seen very frequently in normal epithelium, and which appear as small fragments of chromatic material, surrounded by a material which takes protoplasmic stains.

(2) The stroma is not a constant accompaniment of cancer; as, for instance, in the breast-cancer, the cells may be in direct contact with the surrounding fat-cells, not being separated by any connection tissue whatever.

Cancer may be compared with the parasitic granulomata, the round-celled infiltration to the early anatomical tubercle, and the stroma to the fibrous tu-

bercle. The stroma then is the phagocytic reaction of the organism against the invasion of cancer and its organism, or perhaps to this last alone.

(3) In all actively growing cancers there is a zone of round-celled infiltration, which is generally most intense at the growing point. This is worthy of being borne in mind, as the author, after examination of hundreds of specimens, has never found it absent; whereas in simple tumors it does not always occur.

The leucocytes also penetrate into the cancer-cell itself, for the purpose most likely of destroying the parasite.

In most cases where the cancer-cell has a leucocyte, it is also occupied by a parasite, and it is quite easy to see that the parasite is undergoing destruction or degeneration.

(4) In order to successfully differentiate and demonstrate the presence of the parasites, it is requisite that the fixation of tissue should be perfect, that the sections should be very thin, and that the staining should be accurately done.

Description of the Parasites and their Relation to the Cells and Tissues.—Though many have assented that these bodies are nothing but degeneration, it is, however, certain that many forms of cell-inclusions exist which cannot be placed under any known form of degeneration. It is to these that especial attention is called.

The parasites are round bodies, of very diverse sizes, from .004 millimetre to .04 millimetre or even more in diameter.

There is a central portion, which is called, for convenience, the nucleus; around the nucleus is a layer of protoplasm, outside of which is the capsule. This nucleus differs from the biological nucleus in its microchemical actions. The protoplasm is generally homogeneous, and stains much less deeply than the nucleus. The capsule is a very-well-marked structure, which can be seen both in the fresh as well as in the fixed specimens. That this capsule is a part of the parasite may be demonstrated by the fact that it is sometimes seen folded over on itself, and sometimes, from fixation, it shrinks away from the protoplasm of the cells, and also the parasite can sometimes be seen free in an alveolus with its capsule around it. This description applies to the forms most commonly met with. That these forms are degenerative forms, as has been often stated without proof, is disproven by the following facts:

(1) That they have none of the reactions of any known degeneration. (2) That they are not to be found at all in parts of the cancer which are undergoing degeneration, but only in the actively growing portions. (3) That they are not to be found in any other tissue, not in any kind of degenerated or inflamed tissue, nor in any neoplastic tissue, save only in sarcoma, which is only a cancer of the connective tissue. (4) That they can and do multiply in cancer outside the body, and that they can be grown outside the body by means of cultures.

There has been considerable discussion as to the proper classification of these parasites, but the author prefers the wide application, calling them provisionally protozoa.

The author, during the last six years, has examined 1278 cases, and has found the parasitic bodies in 1130. The parasites are not found in all parts of the cancer, but only for certain at the growing edge; he has failed to find them at the degenerate portions or in those parts where the fibrous tissue is destroying or digesting the cancer-cells. This same statement applies as well to metastasis, so that these bodies are found only in active cells and not in those which show retrograde or degenerative changes. He has examined by the same methods histoid tumors of all kinds, tubercular growths, glanders, etc., and has never

seen any intra- or extracellular bodies which were like the parasitic bodies described.

Experimental Work in Cancer.—The first experimental work on cancer was the attempt to reproduce the disease in animals by placing pieces of cancer in some portion of their bodies.

By the use of appropriate means these bodies can be isolated and cultivated outside of the body. The cultures, when introduced into certain animals, may cause death, with the productions of tumors, which are mostly so far of endothelial origin. Pure cultures can be made from these tumors, which, if inoculated into suitable animals, will produce again similar growths.

On the Management of Acute Traumatic Pneumothorax.

Rudolph Matas (*Annals of Surgery,* April, 1899). The phenomena attending the sudden admission of air into normal, healthy pleura are of such an alarming nature, in the majority of cases, that many surgeons deprecate any operation upon the thoracic walls that necessitates the production of an acute pneumothorax. Quenu and Longuet, in a recent paper on thoracic growths, based upon an analysis of thirty-four cases in which the operations involved the pleura, classified the manifestations observed in thoracic resections into three categories: (1) Slight manifestations, including irregular respiration and weakening of the pulse. (2) Symptoms of moderate severity; sudden weakening of the pulse, alarming irregularity of respiration, with persistence of dyspneic symptoms, in one case for ten days. (3) Grave and fatal manifestations. These include alarming dyspneic symptoms, caused by embarrassed respiration and cardiac action, and at times sudden and fatal collapse.

The mechanism by which this sudden collapse of the lung gives rise to such disastrous phenomena has been the subject of much investigation. It must be something more than the mere suppression of the aërating capacity of one lung, for we know that this is not incompatible with life or with a satisfactory respiratory capacity. Those cases in which fatal asphyxia develops the instant the pleura is opened can be accounted for in no other way than by some form of reflex inhibition of the cardio-respiratory apparatus in the medulla. Rodet and Pourrat concluded, after a series of experiments, that the inertia of the collapsed lung completely suppresses the stimulation, which the sensory fibres receive from the constant movement of air in the lungs and which is perhaps necessary to the respiratory reflex. These observers seemed to see an analogy between the changes that take place in open pneumothorax and in section of the vagi, and see in both conditions the same explanation,—namely, the suppression of the centripetal impressions that are transmitted from the lungs to the medulla, only that in one case (section of vagi) the suppression of respiratory movements is brought about by anesthesia of the lung, and in the other (pneumothorax) by the immobilization and compression. Another interesting point brought out by the researches of Rodet and Pourrat is that the dangers of acute pneumothorax are very much diminished by the repeated injections of small quantities of air into the pleura.

Many preliminary operations have been devised to prevent collapse of the lung when the pleura was to be opened, the principle of the majority of which was the formation of adhesions between the lung and pleura. Quenu and Longuet recommended, as a preliminary operation, the anchoring of the lungs to the ribs by means of a curved needle and thread, including in the suture the inter-

costal muscles, pleura, and lung. The procedure that promises most benefit in preventing pulmonary collapse is the artificial inflation of the lung and the rhythmical maintenance of artificial respiration. The perfection of the Fell-O'Dwyer apparatus has made this perfectly feasible; with this apparatus efficient and prolonged artificial respiration may be carried on, the procedure is not a dangerous one, the operation is suitable to all ages and requires no especial skill, and if necessary the anesthetic may be administered through the tube.

Operation for Exstrophy of the Bladder.

Rutkowski (*Centralblatt für Chirurgie,* No. 16, 1899) describes an original operation for exstrophy of the bladder. Believing that the material used for closure of the defect should contain a mucous as well as muscular layer, he has selected for this purpose a section of the small intestine. A section of the latter six centimetres long, with its mesentery attached, was resected and a flap constructed by incising the gut along the border of its mesenteric attachment. After dissecting the bladder free from the abdominal wall and enlarging somewhat the already existing defect, the intestinal flap was carried down and sutured in place with a double row of sutures. A permanent catheter was introduced and allowed to remain until perfect union was established; this occurred on the tenth day, when the stitches were removed. Eight weeks after the operation the patient could retain twenty-five cubic centimetres of urine in the bladder without any difficulty.

Operative Treatment of Tubercular Cervical Lymph-Nodes.

Charles N. Dowd (*Annals of Surgery,* May, 1899) advocates operative interference in the treatment of all cases of tubercular cervical lymph-nodes; the operation itself is attended with no danger, the resulting scar is less disfiguring, and the possibility of secondary tubercular manifestations is appreciably diminished. Von Noorden, Haehl, Karewski, and others have followed up the histories of those sufferers from tubercular lymphadenitis and estimate the numbers of those who subsequently develop pulmonary tuberculosis at from 10 to 23 per cent. The operation should involve the removal of the entire group or chain of glands involved, and the incision, which best exposes the field for operation, is a rectangular one; it is carried transversely under the border of the lower jaw, and backward as far as the mastoid process, and there deflected downward along the hair-border. It extends as far forward and as far downward as the extent of the disease renders desirable. This incision will expose the anterior and posterior chains, the submaxillary and submental groups. If necessary the sterno-cleido-mastoid should be divided and the internal jugular may, if cut or torn, be ligated. The wholesale removal of the lymphatics on one or both sides of the neck are said to result in no ill-effects in the majority of cases, although occasionally edema of more or less persistence may follow. Bayer, of Prague, has found that new lymphatics are quickly formed when the old ones are occluded. As to the ultimate results of the operation, statistics, gathered from the tables of Wohlgemuth, Haehl, and Von Noorden, show that 65.4 per cent. were apparently cured, 18.4 per cent. were living but with local or general tuberculosis, and 16.2 per cent. died of tuberculosis.

THERAPEUTICS.

UNDER THE CHARGE OF

HORATIO C. WOOD, M.D., LL.D.,

AND

ARTHUR A. STEVENS, M.D.

Formalin in the Treatment of Whooping-Cough.

Oliphant (*New York Medical Journal,* March 4, 1899) states that, from his experience with formalin in the treatment of whooping-cough, he is fully convinced that it is as much of a specific for this most distressing and dangerous disease as mercury is for syphilis, or quinine for malarial fever. With the formalin treatment the duration of the severest cases was less than a week and several cases, after three applications, were cured. He regards pertussis as simply an infection of the fauces,—a place perfectly accessible to disinfection, and therefore curable in a few days. Free emesis follows each application, thereby dislodging the germs as well as destroying them. Out of twenty cases treated with this remedy not one failed to be cured within eight days. In conclusion, he warns against too strong a solution being used in cases of young and debilitated children.

Treatment of Gall-Stones.

Carr (*New York Medical Journal,* April 22, 1899) gives the following directions for the treatment of cholelithiasis: To relieve the pain is the first indication, morphine or atropine hypodermically, and chloroform, in the intense paroxysms, will be of special service. Hot applications over the abdomen and hot-water bottles at the feet are advised to promote circulation. Considerable relief may be experienced by draughts of hot water with a little bicarbonate of soda. After the pain is over, if constipation exists, a dose of calomel followed in a few hours by a sulphate or phosphate of sodium may be given. When a person is known to have gall-stones, the diet should exclude fats, sauces, gravies, fried articles, pastry, and whatsoever is liable to cause colicky attacks. Meats, fish, vegetables, fruits, and bread may be allowed, provided there are no contraindications. Water should be taken freely. Vichy water, a glassful in the morning and an hour before luncheon and dinner, is also advised, and Carlsbad salts for their laxative effects. As for drugs that are supposed to act upon the gall-stones, he thinks sweet oil may be of some use, and will aid in the expulsion of stones even if it does not dissolve them. Sodium salicylate stimulates the flow of the bile and is easily administered. Intestinal antiseptics may be required, such as salol, salophen, and naphthalin, and if the bile-ducts are completely occluded, bile pills, coated with salol, given two hours before meals, will prevent putrefactive changes in the intestines. Chlorate of sodium is also used for the same purpose. Among other drugs mentioned are the succinate of sodium in five-grain doses, *t.i.d.*, and succinate of iron peroxide. Gentle massage of the abdomen in the region of the gall-bladder may have a use in the expulsion of small

stones, but care should be taken that there is no impaction of large calculi. Exercise to strengthen the abdominal muscles and increase the action of the diaphragm, fresh air and regulated diet are also beneficial.

On the Absorption of Iron.

Austin (*Boston Medical and Surgical Journal,* March 2, 1899) concludes a paper on this subject as follows:

(1) That iron is constantly being eliminated both in urine and feces even during fasting.

(2) That apparently raw meat furnishes an available form of iron for absorption under normal conditions.

(3) That inorganic iron, as represented by ferrous sulphate, is non-absorbable.

(4) That albuminates and peptonates of iron are absorbable, but to a limited extent.

(5) That organic iron, of which hematin and hemoglobin are representatives, furnishes the most easily absorbable and most valuable of all iron preparations.

The Treatment of Syphilis in its Early Stages.

L. Bolton Bangs (*Medical Record,* March 11, 1899) read a paper on this subject at a recent meeting of the New York Academy of Medicine. He said that the two great essentials to success in the early treatment of syphilis were the administration of mercury to the point of tolerance and careful attention to hygiene and the general health. He was in favor of excision of the initial lesion, as it was an infective mass which should be removed. The local use of mercurials would hasten the healing of the initial lesion. As mercury caused fatty degeneration of the products, and iodide of potassium favored absorption only, it was evident that the iodides found their appropriate sphere of usefulness late in the disease, and especially in combating the nervous manifestations. If it was admitted that histologically all the secondary manifestations of syphilis were composed of almost exactly the same elements as was the initial lesion itself, how could it be argued that there was nothing to treat until the development of these syphilitic lesions?

If the remedy was well borne, it was preferable to give it by the mouth, and in such quantities as would not interfere with digestion, but which would produce the physiological effect. In most instances the system became tolerant of the drug in a short time, and hence it was well to suspend the remedy or reduce the dose from time to time. It was his custom to intermit the internal administration of the medicine, even if well borne, substituting for it inunctions. Occasionally, hypodermic injections into the buttocks were proper, but it should be remembered that a few deaths had been reported from this method of administration. One of the most important guides to the length of time the treatment would have to be persisted in was to be found in the enlargement of the glands. So long as they remained increased in size, it was an evidence that the treatment must be continued. The duration of the treatment must depend somewhat upon the individual and the activity of the disease, but experience showed that it was best to continue it for from three to six years to secure to the patient the best possible protection in later life.

The Treatment of Secondary Syphilis.

Robert W. Taylor (*Medical Record*, March 11, 1899) read a paper with the above title at a recent meeting of the New York Academy of Medicine. He said the old Ricord plan of free mercurialization, together with the use of iodide, seemed to be far better than emasculated, narrow gauge method now in vogue. Whatever mercurial was swallowed, it must be acted upon in the intestinal canal and converted, in whole or in part, into peptonates or albuminates before absorption could take place. Chemical examinations had proved that when gastro-intestinal derangement was not produced by mercury, a goodly portion of it was absorbed, and, of course, under such circumstances the effect on the syphilis was beneficial. But investigations had shown further that, as time went on, less and less was absorbed and many a syphilitic had continued to take his mercurials long after they had ceased to be absorbed, and to the great detriment of his digestion and general health. Taylor believed that the interrupted treatment with small doses of mercury was radically wrong. The process of syphilitic infection was one of constant growth and division from the beginning. It was very certain, therefore, that excision of the chancre would not abort the disease. In 1870 the originator of the interrupted treatment had stated the duration of treatment should be about two years and a half, yet a few years ago the same physician had expressed the opinion that syphilis was a diathetic disease, like gout or rheumatism, and was one which demanded life-long treatment.

As a general rule, the treatment should begin just as soon as the general rash appeared, together with the other symptoms of the disease. The mercurial treatment covering the first six months of the disease was far more salutary and effective than a course extending over a year or more, but instituted later on. It was certainly important that the physician should have a fair knowledge of the constitution of his syphilitic patients.

It was always well to begin the medication in a manner which would not annoy or discourage the patient, and hence one should not be in too great haste to commence the inunction treatment. In this stage, mercury was usually well borne when given by the mouth, and therefore pills of the protoiodide of mercury, half a grain each, might be given three times a day. Having given proper attention to the intestinal canal and the state of the mouth, the dose of the drug could be safely increased until its effect was obvious. It was always a good rule, as the rash was declining, to discontinue the pill and give several courses of mercurial inunctions in order that the whole surface of the body might be acted upon. The papular and pustular lesions in the hairy parts were generally best treated locally by mercurial applications. By such a course of treatment it was not generally difficult to persuade an intelligent patient to discontinue the pills altogether and make use of the systematic inunction treatment. To be effective, the mercurial inunctions should be thoroughly administered over the whole body, in regions, using about sixty grains of the ointment. Usually after fifteen or twenty inunctions, at intervals of a day or two, the treatment could be discontinued for three or four weeks. Up to this point very great care should be taken so to regulate the patient's habits of life, including changes of scene and proper recreations, as to maintain the general nutrition and health at the highest possible point. It was well to encourage the use of Turkish baths without the cold plunge, or, if at the seaside, the use of salt-water baths.

Study and experience had taught him that the physician should not too

long defer the use of iodide of potassium, which was best given in doses of from ten to thirty grains, or even more, three or four times a day. It was often necessary to suspend the inunction treatment for various reasons, and at such times it was not his practice to go back to the pills, but to make use of a strong "mixed treatment." After about five months of the treatment already outlined, the patient would generally present no evidence of syphilis. The patient should then be given a respite from medication for three or four weeks, and then the treatment should be resumed for about three months longer. In many cases the necessity for treatment was not always apparent, but during the second year, or perhaps even later, it was well to give the patient occasional courses of inunctions. In this second year of the disease the treatment should be given for two or three months at a time, and then intermitted for six or eight weeks. Hypodermic injections of the bichloride of mercury should be used in emergencies, and it was well to bear in mind that mercurial vapor baths had a certain sphere of usefulness in the later stages of syphilis.

Organotherapy in Inoperable Carcinoma.

Dorland (*Therapeutic Gazette,* May 15, 1899) draws the following deductions from a study of this subject:

(1) The ovaries exert a curious and as yet incomprehensible influence over the tissues of the body, and especially over the mammary glands.

(2) This ovarian influence is in part neutralized by the action of the thyroid gland or of thyroid substance introduced into the body.

(3) The administration of thyroid extract alone to patients suffering from cancer of the mammary gland or of the cervix uteri which has passed beyond the possibility of extirpation by the knife exerts a slight inhibitory action upon the growth, and results in a decided relief of the two prominent symptoms,—pain and discharge. This action, however, appears to be but temporary.

(4) The removal of the ovaries in cases of inoperable carcinomata, provided these organs be actively functionating, will result in many cases in an arrest of the progress of the malignant disease, or even in a total destruction of the neoplasm, and an apparent cure of the condition.

(5) This inhibitory action of oöphorectomy in inoperable carcinomata is more decided if at the same time as much of the cancerous growth be excised as is possible, and the operations be supplemented by the administration of thyroid extract in full doses.

(6) In older women, in whom there has already occurred an atrophy of the ovarian stroma, excision of these organs does not result as promptly nor as favorably as in women who are passing through the period of sexual activity.

(7) The relief afforded by the employment of Beatson's method appears in from twenty-four to forty-eight hours, and in favorable cases is rapidly progressive.

(8) The dose of the thyroid extract that may be safely employed varies from ten to fifteen grains daily.

(9) It would seem that even though this method should not result in an absolute cure of the malignant disease, it would afford a longer lease on life and more effectual relief from suffering than would any other palliative operative procedure as yet devised.

The Serum Treatment of Diphtheria in the New York Foundling Hospital during 1898.

Northrup (*Medical News,* April 29, 1899) contributes the following statistics: During 1898, 103 patients with diphtheria were treated with antitoxin at the New York Foundling Hospital, with thirteen deaths,—a mortality of 12½ per cent. Statistics of immunity are not easily compiled, but the writer believes that the strongest statement that can be made from the Foundling Hospital is that there have been so few cases as 103, and that within two years an epidemic of measles has been passed through without there being a single fatal complication of diphtheria. The author concludes that in immunizing antitoxin has attained almost ideal results.

Sodium Cinnamate in Pulmonary Tuberculosis.

Mann (*Journal of the American Medical Association* and *Merck's Archives,* February, 1899), in a paper read before the New York Academy of Medicine, in January, especially considered the intravenous injection of aqueous solutions of sodium cinnamate. The first change produced was an increase in the number of white corpuscles in the blood. This was noticeable within a few hours after injection. The maximum was reached in twenty-four hours and nearly disappeared in forty-eight hours. The capillaries of the affected areas became dilated and crowded with leucocytes. These leucocytes gathered about the tuberculous foci, forming a dense wall around the infected areas. After a month or two new blood-vessels sprang up, granulations began to form, and as the necrotic material composing the tuberculous mass was absorbed, granulation-tissue took its place. Finally, the diseased area was replaced by a connective-tissue scar. The whole process may be summed up by saying the treatment substituted an active inflammation, the result of which was cicatrization. Small cavities were entirely obliterated, and even large ones were surrounded by dense connective tissue, with a smooth, dry lining of the same tissue. Fevers and night-sweats in favorable cases disappeared in two or three weeks, and there was a general feeling of well-being and increased strength. One of the earliest signs of improvement was a change in the expectoration to muco-purulent or mucoid, and a diminution in its quantity. The treatment usually extended over three months, but from five months to a year might be required in some cases.

The original preparation used was an emulsion of yolk of egg, containing water and cinnamic acid ground up finely and rendered alkaline by sodium carbonate, which was added gradually in several small portions. It was found, however, that the injection of the acid mixture caused chills. The fineness of the emulsion was a matter of great importance. Subsequently aqueous solutions of pure sodium cinnamate were used in strengths of 1 and 5 per cent. It is absolutely necessary to begin with one or two minims only of a 1-per-cent. solution, especially in severe or hemorrhagic cases or when the patient is very weak. The dose is increased gradually from one-one-hundredth grain to one-fourth or one-third grain. This latter dose should seldom be exceeded. The injections are repeated at intervals of forty-eight hours usually, but for convenience they may be given two or three times a week in somewhat larger doses.

OBSTETRICS.

UNDER THE CHARGE OF

BARTON COOKE HIRST, M.D.,

ASSISTED BY

W. A. NEWMAN DORLAND, M.D.

Differential Diagnosis of Pelvic Peritonitis and Pelvic Cellulitis.

Van de Warker (*American Gynecological and Obstetrical Journal,* March, 1899) gives the following differentiating points between pelvic peritonitis and pelvic cellulitis.

Pelvic Peritonitis.	*Pelvic Cellulitis.*
(1) Follows labor or abortion in a few days.	(1) Occurs eighteen to twenty days after labor.
(2) Begins with a rigor.	(2) No rigor (Bernutz).
(3) Severe fever, face pinched, prostration.	(3) Less fever, no facial or general reaction.
(4) Pain acute, sharp.	(4) Pain dull, throbbing, like beginning abscess.
(5) Great tenderness of the abdomen.	(5) Less tenderness.
(6) Tumor is usually behind the pubis.	(6) Tumor is usually in the iliac fossa.
(7) The tumor as a rule does not reach above the pelvic brim.	(7) The tumor reaches to or above the pelvic brim.
(8) In the early stage the disease is more evident in the vaginal cul-de-sac.	(8) In the early stage the disease is less evident in the cul-de-sac.
(9) Suppuration rare.	(9) Suppuration is very frequent in phlegmons (Bernutz).
(10) Purulent pelvic peritonitis is attended with symptoms of peritonitis.	(10) No symptoms of peritonitis.
(11) Purulent mass, intra-abdominal.	(11) Purulent mass in iliac fossa, subperitoneal.
(12) Pus confined.	(12) Pus often diffused and burrowing.
(13) Pus tends towards viscera or remains encysted.	(13) Pus tends towards abdominal wall or deep iliac fossa.
(14) No retraction of thigh.	(14) Retraction of thigh.
(15) When the mass extends into the iliac fossa it is not well defined.	(15) In cellulitis the mass is always well defined.
(16) Tumor elastic or fluctuating.	(16) Tumor more solid.
(17) There is always uterine displacement with periuterine mass.	(17) Uterine displacement may be absent with very large pelvic mass.
(18) Never involves the abdominal wall.	(18) Often involves abdominal wall.

Pelvic Peritonitis.	*Pelvic Cellulitis.*
(19) Relapses from slight causes are frequent.	(19) Relapses are rare.
(20) There is sometimes an intestinal percussion-note over the mass.	(20) Dulness on percussion.
(21) Never extends to vaginal wall.	(21) There is extension of cellulitis from the broad ligament or iliac fossa into the vaginal wall.
(22) Is often associated with specific infection of the vagina.	(22) There is usually no specific infection.
(23) Occurs without lesion of the genitalia.	(23) Often follows lesion of the genitalia.
(24) The pain is always intrapelvic.	(24) In addition pain on the anterior and inner side of the thigh to the leg and foot.
(25) Phlebitis is not observed.	(25) Phlebitis is an occasional complication.

Treatment of the Umbilical Vessels.

According to R. L. Dickinson (*New York Medical Journal,* March 4, 1899) the ideal method of treatment of the cord must accomplish three results,—the vessels must be securely and permanently controlled; infection must be impossible; and the danger of hernia reduced to a minimum. A procedure already beyond the experimental stage accomplishes these results. Electrohemostasis with Skene's forceps is a drying process. The vessel or the stump grasped in the bite of this instrument is in the space of half a minute to two minutes reduced to a white, horny ridge, comparable to the edge of one's finger-nail in consistence and color. This edge does not slough, but promptly becomes reorganized. As Pryor has shown, water-pressure applied to the vessel from behind will make it burst elsewhere, but not at the end thus treated. Dickinson proposes that in the maternities the following method be given a trial. When the child is removed from its mother the cord is caught in two Keith clamps and cut, but not ligated. It is stripped of its jelly at its base. A square of gauze, five or six layers in thickness, may be split up to its centre. The slit is passed around the stump, which lies at the apex of the V, and the cut sides are then lapped over so that the skin of the abdomen is protected from any heat. This gauze should be wrung out of some solution, so that it is damp but not dripping, or a perforated square of asbestos, sterilized by flaming, may be substituted. The jaws of the Skene clamp are coated with vaselin, and the clamp applied so that the edge next to the abdominal wall is placed at the junction of skin and cord. While the cord is drawn upward the clamp is closed firmly to its last notch. The clamp is lifted away from the abdominal wall and the current is turned on for about two minutes. A little bubble will occur as the juices sizzle out. The amount of heat is said to be about 180° F. After the clamp is removed the scissors should cut through the desiccated part of the cord rather close to the abdominal side so as to leave but a narrow ridge projecting. This part of the cord seized becomes organized tissue, and will ordinarily retract without leaving a projecting button. When there is a suspicion of umbilical hernia and when the junction of skin and amnion is in a rather deep pocket in the abdominal wall, this method would probably be inapplicable.

Permanganate of Potassium for Fissures of the Nipple.

Dombrowski (*Le Progrès Medical*, January 7, 1899) advises to paint the nipple three or four times daily with a solution of permanganate of potassium, 2 per cent. to 5 per cent. The fissures will disappear under this treatment in less than a week. This remedy causes considerable smarting at first, but this soon disappears. Nursing is not interfered with, but the breasts should be washed before each feeding with warm sterilized water, and a compress covered with a permeable cloth should be used.

Traumatic Cataract in a New-Born Infant.

Peck (*Pediatrics*, December 15, 1898) records an instance of traumatic cataract in an infant's eye resulting from the pressure of forceps. The right blade of the forceps was displaced so as to cross the right eye and produce pressure on the lower lid. The eyelid was swollen and a large subconjunctival hemorrhage was present; the pupil was partially dilated, and the cornea had a steamy appearance. The lens changed from a dull gray to a white color and became entirely cataractous in twenty minutes' time.

GYNECOLOGY.

UNDER THE CHARGE OF

CHARLES BINGHAM PENROSE, M.D.,

ASSISTED BY

H. D. BEYEA, M.D., AND H. L. WILLIAMS, M.D.

Early Diagnosis of Cancer of the Uterus.

Heitzmann (*Centralblatt für die gesammten Therapie*, July, 1898; *American Journal of the Medical Sciences*, May, 1898) reiterates the fact that hemorrhage, pain, and discharge are late symptoms of malignant disease of the uterus, which are often not marked until after the inoperable stage has been reached, hence the importance of recognizing the presence of carcinoma before these conditions appear.

He calls attention to a valuable aid in diagnosis which he first published twenty years ago.

If a 10-per-cent. solution of sulphate of copper be applied for a minute or two, on a pledget of cotton, to a suspicious erosion of the portio vaginalis, the surface will become quite blanched, if it is a simple ectropion. If it is a simple ulceration, a thin bluish-white coating will form, without hemorrhage. By repeating the applications at intervals of three or four days the erosion will be entirely healed in about two weeks, by an ingrowth of squamous epithelium from the edges of the raw surfaces.

In carcinomatous cases, on the contrary, a light application of the solution of copper will cause bleeding, which can be checked by ferripyrin or perchloride of iron.

The application should be repeated again after a few days. If the area of erosion diminishes, becomes less hyperemic, and surrounded by a ring of newly formed squamous epithelium, the suspicion of malignancy was probably unfounded. But if the erosion should again bleed, more freely than before, the diagnosis of beginning carcinoma is almost certainly established.

In order to confirm the diagnosis a section of tissue should be cut from the diseased portion and submitted to careful microscopical examination. By continuing the applications a positive diagnosis of malignancy can be almost certainly established, if a single bleeding spot persists after the rest of the raw surface has been healed. When cancer of the endometrium is suspected, a sound should be introduced into the uterine cavity and swept carefully over the surface of the interior, in order to detect prominences or disease-affected portions of the mucous membrane. If no bleeding follows the withdrawal of the instrument the disease is in all probability a single hyperplastic endometritis.

If hemorrhage occurs, a cotton applicator saturated with a 10-per-cent. solution of copper is applied to the surface of the endometrium, when the bleeding will probably at once cease, if the case is not malignant, and a few applications bring about a cure. If, however, hemorrhage is increased at each application the presence of cancer should be suspected, and the curette used to confirm the diagnosis. A microscopical examination by a competent pathologist will get a positive result.

Heitzmann has rarely failed to find that the provisional diagnosis, based upon the recurrence of hemorrhage after application of sulphate of copper, has been confirmed by the microscope. The value of this method is shown most strikingly in cases of condyloma, syphilitic and tubercular ulcers, which are easily healed by this treatment, while carcinomatous surfaces are alone unaffected.

Closure of the Abdominal Wound.

Minxevitch (*Annales de Gynécologie,* November, 1898) has made a careful microscopical examination of nineteen abdominal cicatrices of tier and mass suture, and has come to the conclusion that suturing *en masse* is a safer and better method than the tier suture. He considers that the most important factors in obtaining a good result in incisions through the abdominal wall are the use of a medium incision, the use of silk as suture material, and the use of suture *en masse.*

Fibroid Tumor of the Uterus and Albuminuria.

Hubert (*Thèse de Bordeaux,* 1898), after investigating cases where albumin was found in the urine of patients suffering with fibromyoma of the uterus, concluded that it was usually due to compression of the ureter by the neoplasm, with or without renal lesions. Albuminuria alone, in a patient with fibroid tumor, did not necessarily indicate nephritis. Other symptoms of the latter must be detected before a diagnosis can be rendered,—as scanty or excessive secretions, casts, and especially the more general signs of Bright's disease, edema, headaches, nausea and vomiting, and cardiac disturbances.

In brief, functional albuminuria, without renal lesions, is an indication for removal of uterine fibroid, while albuminuria with evidence of Bright's disease, is a contraindication to the operation.

Treatment of Early Tubal Gestation.

Veit (*Zeitschrift für Geburtshülfe und Gynäkologie,* 1899, Band lx, Heft 1) has contributed a paper in which he sets forth his own method of treating cases of this character. He believes that in early ectopic gestation, if the case is seen before the sac of the ovum has been ruptured, the entire ovum should be removed as soon as possible.

If, however, the sac ruptures into the peritoneal cavity, and a hematocele is not formed, a celiotomy should be performed at once.

But if an hematocele forms, and is distinctly limited, a section should be performed only for some positive indication, or in case of complications.

When tubal abortion occurs, either with or without hematocele, or when a dead ovum is retained in the tube, there is no call for immediate operation.

Such patients should be carefully watched, and unless some complication originating in the tubes, or surrounding tissue, should arise, should not be interfered with.

Tubal Menstruation.

Bond (*British Medical Journal,* June 4, 1898) has made a number of interesting observations upon healthy Fallopian tubes during menstruation. In five healthy tubes removed during the menstrual period a bloody fluid was found which showed, on microscopical examination, red and white blood-corpuscles, and epithelial cells in different stages of mucoid degeneration.

On section through the uterine end of the tube a marked thickening of the mucous membrane was found, with considerable round-cell infiltration, but no exfoliation of the epithelial lining. An interesting point was noticed in one case, when menstruation had ceased twenty-four hours previously. There the uterus contained a bloody mucus, while none was present in the tube,—which was taken to indicate that menstruation begins and ceases first in the tube.

From experiments upon animals, Bond concluded that the escape of blood into the tube is a true menstruation, and not the result of simple venous obstruction.

When hydrosalpinx is present, the increased pressure in the tube may present the customary monthly hemorrhage.

Tuberculosis of the Ovaries.

Lauwers (*Bulletin de la Société belge de Gynécology et d'Obstétriques,* Nos. 8 and 9) reports a case of tuberculosis of the ovaries which simulated pregnancy in the following respects: Amenorrhea had been present for several months, together with vomiting and a bluish coloration of the vulva. The cervix was soft, colostrum was present in the breasts. A tumor the size of a fetal head was present in the pelvis, while a large one, giving ballottement on palpation, was found in the abdomen. The uterus, however, was found, upon bimanual examination, to be small and not connected with the growths. Laparotomy was performed, and two large tuberculous ovaries removed.

PATHOLOGY.

UNDER THE CHARGE OF
JOHN GUITERAS, M.D.,
ASSISTED BY
DAVID RIESMAN, M.D.

Acute-Infectious Polyneuritis.

Wokenius (*Ziegler's Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie,* Band xxv, Heft 2, 1899) reports the following case: In a young woman, who previously had enjoyed good health, an eruption suddenly appeared on the extensor surfaces of the lower extremities, the hands, and the anus. Within a week the exanthem faded. Then, coincident with the onset of the menses, paresthesias, lancinating pains, and ataxia developed in all the limbs. Soon the extremities and the trunk-muscles, excepting the recti, became paralyzed. There was no noticeable change in the electric reactions nor any marked atrophy. The bladder function remained normal, the anal sphincter became paralyzed. The knee-jerks were lost. Death occurred from bulbar involvement. At the autopsy, the peripheral nerves were in general white in appearance and very moist. On section the myelin swelled, and blood appeared on the surface; one of the nerves was of a striking point here. Microscopically, the nerves showed varicosities, disintegration of the myelin, and swelling of the fibres. Granule-cells were also present. The interstitial tissue, the epi-, peri-, and endoneurium, was infiltrated with round cells, and in some of the nerves extensive hemorrhages had taken place. Marked round-cell infiltration was also noticed in the celiac ganglion.

In contrast with these marked lesions in the peripheral nervous system, the nerve-centres were entirely free from inflammatory changes. There was as an incidental lesion, a chronic spinal leptomeningitis. A small hemorrhage into an anterior horn in the dorsal region was also found. In the spinal roots the inflammatory process was well marked.

The case was evidently one of acute parenchymatous and interstitial neuritis, due to some infection. Cultures from the spleen and a nerve yielded colonies of the staphylococcus pyogenes albus. On section of the peroneal nerve, stained for bacteria with Löffler's solution and carbol-fuchsin, bodies were found resembling micrococci. Gram's stain gave negative results. Despite this, the author thinks that the bodies must be considered bacterial in nature, and not granules of Mastzellen, the only objects with which they could be confounded. The disease was brought about by the micrococci, or by these and their toxins. The remarkable feature was the strict localization to the peripheral nerves.

Pathological Lipogenesis.

Lindemann (*Ziegler's Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie,* Band xxv, Heft 2, 1899) remarks that the separation of fatty processes into infiltration and degeneration is gradually becoming very

vague. Fatty degeneration has always been defined as a conversion of the cell-protoplasm into fat, and infiltration as a deposit of fat introduced into the cell from without. But it has been proved that fats can be formed from carbohydrates, and that this occurs in the cell. This mode of fat-formation cannot belong either to infiltration or to degeneration, though it is usually classed with the former. An attempt has been made to substitute for the vague term infiltration that of *transport,—i.e.,* of the conveying of fat from the fat-depots to the cells.

Lindemann divides the possible modes of the accumulation of fat in cells as follows:

(I) *Formation of fat from albumin.*

(1) In the living cell: (*a*) From the albumin of the paraplasm; (*b*) from the albumin of the protoplasm proper; (*c*) from the albumin of the surrounding fluids.

(2) In the dead cell: (*a*) Through a fermentation decomposition of the albumin; (*b*) through the activity of bacteria.

(II) *Formation of fat from carbohydrates.*

(1) From the carbohydrates of the cell.

(2) From the carbohydrates of the tissues of the body: (*a*) From the carbohydrates of the food; (*b*) from the carbohydrates of the liver and muscles; (*c*) from the carbohydrates split off from the albumin.

(III) *Formation of fat from the lecithin of the cell.*

(IV) *Conveyance of the fat already formed from the fat-depots to the cell (transport).*

(V) *Ingestion of the food fat by the cells of the body.*

(VI) *Phagocytic ingestion of the fat with the formation of granule-cells.*

With the exception of the granule-cell, in none of these modes is there really an infiltration of fat in the old sense. Even the fat of the food undergoes a change during its deposit.

Those forms of intracellular fat-accumulation, in which neither fat nor its nearest components are brought to the cell, may be designated as *endocellular lipogenesis,* in contradistinction to *extracellular lipogenesis,* in which a transport occurs, and which is again divisible into an alimentary and a phagocytic form. Endocellular lipogenesis may provisionally be divided into (1) *physiologic,* (2) *degenerative,* and (3) *postmortal* lipogenesis. Physiologic lipogenesis is characterized by the absence of remarked disturbances in the function and the structure of the cells. The cell, as in the case of the mammary gland, must possess the power of recuperation. In degenerative lipogenesis the fat is formed out of an integral part of the cell; the structure of the cell is markedly altered. To assume that such a lipogenesis occurs, it is first necessary to prove that fat can be formed out of proteids, a possibility denied by Pflüger. It has been demonstrated that fat can be formed from proteid through bacterial agency, as in the case of adipocere, and in the maturation of cheese. But fat can also be formed outside of the body without the bacterial influence fatty changes take place in dead tissues kept under aseptic conditions.

Lindemann then takes up the subject of endocellular and extracellular lipogenesis in detail. Endocellular lipogenesis is demonstrated in the fattening of animals by feeding them on carbohydrates,—the fat can only be formed through a synthetic action of the cells. But besides carbohydrates, lecithin and albumin must be considered sources of fat. The lecithin is probably an antecedent of the fat in cases of fatty degeneration. Among the proofs of the formation of fat out

of albumins are mentioned—(1) the secretion of milk; (2) the formation of fat from albumin during the feeding with fat; (3) fatty degeneration; (4) the formation of fat in phosphorus-poisoning; (5) the formation of adipocere; (6) the formation of fat in the ripening of cheese, etc. Two of these (5 and 6) have no weight, as bacteria are probably concerned in the process in both cases. Regarding No. 2, it has been proved by Munk and by Rosenfeld that foreign fat introduced into the organism is deposited unchanged. Only three remain as evidence,—milk-production, fatty degeneration, and phosphorus-poisoning. Rosenfeld maintained that the milk fat was none other than the fat introduced and stored in the fat-depots. (See UNIVERSITY MEDICAL MAGAZINE, Vol. ix, p. 853.) A slut fed with mutton-tallow secreted a milk containing mutton-tallow and not dog-fat. But Lindemann holds that if Rosenfeld's contention, that the milk-fat is nothing else than body-fat, were correct, then there should be no difference between the fat of butter and the tallow of cattle. But there is a marked difference, butter containing a vastly larger quantity of volatile fatty acids.

Regarding fatty degeneration, the existence of this process has been entirely denied by Rosenfeld, who believes the fat is brought from the fat-depots of its body, and found that in starved hens fatty degeneration of the liver did not occur after phosphorus-poisoning. Lindemann repeated these experiments in pigeons, and found that fatty degeneration of the liver occurred in the starved bird poisoned with phosphorus in no less degree as in the pigeon fed as usual. Rosenfeld had also noted that in animals which had been fed with mutton-tallow phosphorus-poisoning produced a fat-deposit in the liver, this fat, however, consisted of mutton-tallow, not of dog-fat. Lindemann admits that there is an infiltration of fat, a transport from the fat-depots, in phosphorus-poisoning, but contends that there may be a degeneration as well.

The possibility also remains, as suggested by Pflüger, that the fat taken up is utilized to regenerate the albumin. Finally, if it is even proved that phosphorus does not produce fatty degeneration, that is then true only of phosphorus, and must be proved for other pathologic processes.

Extracellular lipogenesis—i.e., that in which the fat of the food or that given to the blood by the fat-depots of the body is deposited in certain cells—is not a simple process, but a complicated synthesis, which for its performance requires healthy cells. Lindemann showed that if the renal epithelium was injured by poisoning animals with chromic acid, and phosphorus was afterwards given, fat was deposited practically only in cells, the nuclei of which were free from damage. This, then, would indicate a transport of fat, and also that diseased cells cannot take up fat. But when oleum pulegii was given to animals that had previously received chromic acid, the diseased renal cells—except those completely neurotic—were filled with fat-granules, which goes to prove, the author holds, that while fatty infiltration requires a healthy cell, diseased cells can undergo fatty degeneration.

Degenerative lipogenesis is accompanied by certain characteristic changes in the nuclei of the cells, which resemble those that have been described as pyknosis.

THE PRIMARY INFECTION IN ACUTE SUPPURATIONS OF THE TYMPANUM.

GREEN (*Journal of the Boston Society of Medical Sciences*, January, 1899) has carried out some investigations to ascertain the original infection of the tym-

panum before an opening in the drum-membrane had exposed the cavity to invasion from the meatus. The results of bacteriological examination in 101 cultures, made from the first drop of pus evacuated after paracentesis of the drum-membrane in acute suppuration of the tympanum, were as follows: In twenty-eight cases there was a mixed infection. In seventy-three cases pure cultures were reported,—viz., Staphylococcus (albus eight, aureus nine, variety not stated nineteen), 36; streptococcus, 19; pneumococcus, 10; bacillus diphtheriæ, 2; bacillus pyocyaneus, 3; a capsule bacillus, 3.

The Effect of Romanowski's Stain on Bacteria.

Zettnow (*Zeitschrift für Hygiene und Infectionskrankheiten,* Band xxx, Heft 1, 1899) states that the best methylene blue for Romanowski's double stain (methylene-blue and eosin) is the medicinal methylene blue of the Höchster Farbwerke. But any preparation will answer, provided it is treated in the following way: (1) To 100 cubic centimetres of a 1-per-cent. solution of crystals with a green reflex, four cubic centimetres of normal sodium hydrate solution are added. The mixture is allowed to stand three or four hours at from 20° to 25° C., and then four cubic centimetres normal solution of hydrochloric acid are added. (2) The crystalline dyes with reddish-violet reflex,—*i.e.*, the zinc chloride double salts require double quantities of the aforementioned additions. At the time of using from one to four drops of a 5-per-cent. solution of crystallized soda are added to each cubic centimetre of methylene-blue solution. To prevent mould-formation, Zettnow adds to 500 cubic centimetres of the methylene-blue solution five cubic centimetres of a solution of thymol in alcohol (1 to 10).

The eosin used by Zettnow is bromin-eosin B A extra of the Höchster works in 10-per-cent. solution. As differentiating solution he employs for blood, a solution of methylene-blue, 2, in water, 400, and glacial acetic acid one cubic centimetre; for bacteria, a solution of eosin, 1 to 500; or a solution of methylene-blue 1 : 10,000; or the one first given.

In preparing the double stain, two parts of methylene-blue and one of eosin are used. The cover-glass film is stained for from two to five minutes, washed with water, and then, for blood preparations, with the acetic-acid methylene-blue solution; for bacteria, two to six times with the eosin solution, followed by counter-staining with the 1 : 10,000 methylene-blue solution.

Using this method, the author was able to recognize in many bacteria a red-staining part—"chromatin"—and a blue-staining "plasma." A large number of bacteria consists only of chromatin; in the others the chromatin for the most part predominates, but in some very young cultures the plasma exceeds the chromatin in amount. The red-staining substance is probably the nucleus; the blue-staining portion the author designates *entoplasm,* and that plasma of bacteria, which is only stainable after previous mordanting,—*e.g.*, the flagella and capsule,—he terms ectoplasm. The results of the double-staining of 102 species of bacteria are given.

Agglutinating Substance in Experimental Infection.

Van Emden (*Zeitschrift für Hygiene und Infectionskrankheiten,* Band xxx, Heft 1, 1899) has attempted to find the place of formation of the agglutinating substance in experimental infection with the bacillus aërogenes. He found that in the first few days following the inoculation the agglutinins were present

in the spleen in larger amount than in any other organ, or even than in the blood. As after the injection into an animal of serum rich in agglutinins the spleen did not store the agglutinating substance to any extent, the conclusion is drawn that the large amount found in the spleen, after the injection of the bacteria, is due to a production of the substance by that organ. The freshly-formed agglutinins are gradually taken up by the circulating blood and stored there, so that in time the contents of the blood is greater than that of the place of formation.

The author then studied the formation of agglutinins in animals deprived of the spleen, and found that they were produced in fair quantity. Hence other organs besides the spleen must possess the power of elaborating agglutinins, and it was shown that the bone-marrow and the lymph-glands had this power, as well as the liver, kidney, and lung. The production was greatest in the lymphoid tissues.

MISCELLANEOUS.

TO REVISE THE U. S. PHARMACOPEIA.

To all whom it may concern:

In accordance with instructions given by resolutions passed at the National Convention for Revision of the Pharmacopeia of the United States of America, held in Washington, A.D. 1890, I herewith give notice that a General Convention for the Revision of the Pharmacopeia of the United States of America will be held in the City of Washington, D. C., beginning on the first Wednesday in May, 1900. It is requested that the several bodies represented in the conventions of 1880 and 1890, and also such other incorporated State Medical and Pharmaceutical Associations, and incorporated Colleges of Medicine and Pharmacy, as shall have been in continuous operation for at least five years immediately preceding this notice, shall each elect delegates, not exceeding three in number; and that the Surgeon-General of the Army, the Surgeon-General of the Navy, and the Surgeon-General of the Marine Hospital Service shall appoint, each, not exceeding three medical officers to attend the aforesaid convention.

It is desired that the several Medical and Pharmaceutical bodies, and the Medical Departments of the Army, Navy, and Marine Hospital Service shall transmit to me the names and residences of their respective delegates, so soon as said delegates shall have been appointed, so that a list of the delegates to the convention may be published, in accordance with the resolutions passed at the 1890 Convention for the Revision of the Pharmacopeia, in the newspaper and medical journals in the month of March, 1900. Finally, it is further

requested that the several Medical and Pharmaceutical bodies concerned, as well as the Medical Departments of the Army, Navy, and Marine Hospital Service, shall submit the present Pharmacopeia to a careful revision, and that their delegates shall transmit the result of their labors to Dr. Frederick A. Castle, 51 West Fifty-eighth Street, New York City, Secretary of the Committee of Revision and Publication of the U. S. Pharmacopeia, at least three months before May 2, 1900, the date fixed for the meeting of the convention.

H. C. Wood,

President of the National Convention for Revising the U. S. Pharmacopeia, held in Washington, D. C., A.D. 1890.

REUNION OF THE CLASS OF 1889 (MEDICAL).

The Class of '89 of the Medical Department of the University will hold an elaborate reunion on the evening of Commencement Day, at the University Club. It is thought that fully one hundred members of the class will be in attendance. The committee in charge consists of Drs. William Campbell Posey, chairman, Alfred Stengel, J. Allison Scott, John T. Carpenter, Jr.

PERICARDITIS IN CHILDREN.

Baginsky (*Berliner klinische Wochenschrift,* November 28, 1898). Writers differ as to the frequency with which pericarditis occurs in children, but Baginsky agrees with Henoch that it is by no means uncommon. His present paper is founded upon a study of sixty-six cases which occurred among 4500 admissions to hospital. Two noteworthy facts are at once apparent when the cases are examined, the one, that nearly one-third of the whole number of cases (twenty out of sixty-six) were in infants under a year old; and the other, that in six cases measles was the exciting cause of the malady. *Serous pericarditis* was present in thirteen patients out of the whole number, and was generally easy to recognize clinically. The symptoms were well marked and severe, consisting of cyanosis, dyspnea, and pain in the chest, with irregular fever and increased pulse frequency (120 to 150 beats per minute). The area of dulness caused by the fluid did not correspond very exactly with the usually described "triangle" on the front of the chest: in the horizontal position the right margin was generally almost vertical in direction, while on raising the child into a sitting posture, the area of dulness assumed an elongated oval shape nearly horizontally

directed and continuous at its right lower border with the liver dulness. An area of dulness could also be made out on the back of the thorax at one or both bases of the lungs. This is liable to be mistaken for pleural effusion, but any doubt is easily cleared up on deep inspiration, when the breath-sounds are clearly heard over the compressed area, or by puncture. The typical friction-sound is generally well heard in these cases. The treatment of this form of pericarditis is in the main that of the disease, generally rheumatism, which causes it. Digitalis or strophanthus may be of use to quiet the overacting heart, and ichthyol ointment applied locally. Mercury is not generally advisable, but may be of assistance in severe cases. In none of the present series of cases was surgical treatment resorted to.

Purulent pericarditis occurred in twenty cases, of which four were caused by actual tuberculosis of the pericardium, and three followed measles; the rest were associated with suppurative processes elsewhere. Eleven of these patients were infants under 1 year. The general symptoms were very severe, with restlessness, cyanosis, dyspnea, and cachexia. The temperature was generally intermittent, but in the youngest case of all, a child of 10 days, there was no pyrexia throughout. All the cases ended fatally. The physical signs were slight, friction being often entirely absent, and no increase of cardiac dulness being produced.

Pericarditis appeared along with *tuberculosis* in eleven cases, but in only six of them was there actual tubercular deposit on the pericardium. In these latter the physical signs were well marked, and the symptoms also unmistakable; in the others the phenomena of the general disease often masked those due to the pericardial lesion.

Fibrinous pericarditis is the commonest variety, and results, as indeed the tubercular disease may also, in obliteration of the pericardial cavity by adhesion of the two surfaces. In very early years the course is more acute than in older children, in whom the disease may take a chronic form. The latter are generally easily diagnosed, but the former may give rise to no characteristic phenomena, and be discovered only post-mortem. A very real danger, which must always be borne in mind, is that of sudden death without warning, even in cases apparently convalescent. Baginsky records two such occurrences. In chronic cases great enlargement of the heart results, owing to the impediment existing to its proper contraction: the fibrous tissue formed may also contract round the roots of the great vessels and cause serious narrowing of their calibre. An exactly opposite condition of the heart is occasionally found,—namely, an atrophy of the muscular wall and general smallness of the organ. Treatment in these cases—beyond that directed to the cause of the malady, which is generally rheumatism—can only

be palliative, and must consist in the use of those means already indicated as useful in the serous form of the disease.—*The Medical and Surgical Review of Reviews.*

SARCOMA OF THE TESTICLE.

Kober (*American Journal of the Medical Sciences,* May, 1899) presents a study of sarcoma of the testicle based upon 114 cases. In thirty-two of the 114 tabulated cases there is a distinct history of traumatism. In eighteen cases the disease developed in retained testicles, or when the descent had been delayed; in two cases there was a syphilitic history; in one instance the history shows mumps, with metastasis to a non-descended testicle; four of the cases were complicated with hernia, while in the others no special etiological factors are given. In the majority of the cases there is no history of traumatism, and in many of these the reporters assume that the patients were subjects of some new-growth diathesis. Of 107 cases, the age was below 10 years in ten, and between 21 and 50 years in seventy-six. In thirty-nine of the 114 cases the character of sarcoma was not specified; but of seventy-five cases, 42.6 per cent. were round-celled sarcoma, 12 per cent. small round-celled sarcoma, 10.6 per cent. round- and spindle-celled sarcoma, 10.6 per cent. cystic sarcoma, 9.3 per cent. alveolar sarcoma, and 9 per cent. spindle-celled sarcoma.

In most of the histories the patients observed a gradual but painless enlargement of the testicle, lasting for an indefinite time, followed by a period during which, in the course of a few weeks, the tumor developed very rapidly, accompanied by a dull, aching and sometimes lancinating pain. The tumor retains the shape of a normal testicle, and is therefore often mistaken for orchitis. It is only when the tunica albuginea has perforated that nodular projections appear. The tumor is quite firm at first, but later often becomes soft and even fluctuating, and may be mistaken for a collection of fluid, and tapped. Not infrequently there is an apparent quiescence or even an actual diminution in size due to absorption of the fluid effusion. Ulceration is rare, and only occurred once in the 114 cases. Implication of the glands—iliac and lumbar—is quite common in advanced cases. The diagnosis between sarcoma and carcinoma is often impossible, and is of little moment to the patient as ablation is required in both instances. The diagnosis from orchitis is also difficult. Sarcomas, however, grow more slowly, are less painful, and in sarcoma the presence of the testicle cannot be so readily made out as in orchitis. The general appearance of the patient, and the

absence of elasticity in the tumor, will aid in the recognition of tuberculosis.

The presence of fluid may lead to the diagnosis of hematocele or hydrocele. In all doubtful cases an exploratory incision should be made, followed at once by extirpation, especially if puncture of the tumor is followed by the flow of bright blood. The prognosis of all varieties of sarcoma is grave, and especially in children, and in rapidly growing tumors. Of the 114 cases, no history of the ultimate result was obtainable in thirty-seven; forty-one died within a period varying from a few days to three years after operation; eleven patients—or 27 per cent.—lived from seven to twelve months after the operation; five patients—or 12 per cent.—lived from sixteen to twenty-four months, and two patients—or 5 per cent.—lived three years after the operation, but perished from secondary growths. Of the thirty-five remaining cases, in which the end results were known, eight were alive for periods ranging from six years to fifteen years after the operation, and eight for periods ranging from one to four years after the operation. The author concludes that the results of operative interference have been very gratifying, and that the only treatment that offers any hope is prompt and radical extirpation.

Alcoholism.

A case of acute alcoholism may at the same time be one of apoplexy. One suffering from an apoplectic attack may have the smell of liquor on his breath and yet not be intoxicated. The breathing in a case of acute alcoholism, while it may be deep and heavy, is not truly stertorous nor of the Cheyne-Stokes variety, and examination will not reveal paralysis of one side of the body. Consciousness may appear to be lost, but it is not absolute, and the patient can generally be aroused, at least for a moment, from his stupor. The pupils are usually equal and dilated. The temperature may be two or three degrees below normal, but it does not show the successive variations of true apoplexy. Southey has recommended the injection into the rectum of a pint and a half of cold water with a tablespoonful of salt dissolved in it, which in his experience once restored to consciousness a case of extreme drunkenness.—Mills, in "Text-Book on Nervous Diseases."

BOOK NOTICES.

An Essay on the Nature and the Consequences of Anomalies of Refraction. By F. C. Donders, M.D., late Professor of Physiology and Ophthalmology in the University of Utrecht. (Translated under the supervision of the Kirschbaum School of Languages and Bureau of Translation of Philadelphia.) Revised and edited by Charles A. Oliver, A.M., M.D. (Univ. Pa.), one of the Attending Surgeons to the Wills' Eye Hospital; one of the Ophthalmic Surgeons to the Philadelphia Hospital, etc. With Portrait and other Illustrations. 8vo, pp. 81. Philadelphia: P. Blakiston's Son & Co.

As stated in the preface, the editor has not attempted to draw a comparison between the author's and his own thoughts and beliefs. It has been his sole desire to offer such a man's works an increased amount of usefulness. In this spirit and as a result of this thought he has given each aphorism as it appeared in the original work, thus enabling him to show to the present ophthalmic world to what slight extents the fundamental principles laid down in the pages of this almost unique brochure have suffered correction, alteration, and conversion, during the thirty progressive years that have followed its publication.

The work is divided into seven sections, each embracing a series of paragraphs which, while concise and terse, not only give the gist of all that was known upon each particular subject at the time the book was written, but offer many new thoughts and suggestions that are still yet not better understood; in fact, it contains a mine of wealth that is worthy of the most careful perusal by the intelligent student and scientific investigator.

Both the editor and the publisher are to be congratulated upon good and conscientious work.

A Text-Book of Pathology. By Alfred Stengel, M.D., Instructor in Clinical Medicine in the University of Pennsylvania, Professor of Clinical Medicine in the Woman's Medical College, etc. Philadelphia: W. B. Saunders, 1898.

There is, perhaps, no department of medicine less burdened with text-books than pathology. Of those already existing, some have been written especially for the pathologist; others are too large and discursive, and still others are so small and elementary as not to be of service to the mass of physicians. Dr. Stengel's book portrays the subject from the point of view of the "clinical pathologist." The latest

and best has been here presented in a brief and practical manner, so that the matter is easily accessible, and especially useful for practitioners and students.

The subject is divided into two parts, general and special pathology. In the first are considered such topics as etiology, the disorders of circulation and of nutrition, inflammation, retrogressive and progressive tissue-changes, bacteria, and the diseases caused by them, and animal parasites and the diseases to which they give rise. In the second part, the diseases affecting each system and organ are described in detail. The work is copiously illustrated. A very full index is appended. The mechanical execution is very creditable to the publisher.

To what has been said, it remains only for the writer to fully endorse Dr. Stengel's excellent book.

Annual and Analytical Cyclopedia of Practical Medicine. By Charles E. de M. Sajous, M.D., and One Hundred Associate Editors. Volumes II and III. Philadelphia, New York, and Chicago: The F. A. Davis Company, 1899.

The first volume of this work has been already reviewed in the Magazine. The second volume begins with bromide of ethyl, and the third closes with infantile myxedema (cretinism). The original plan to have each contributor prepare his articles has been carried out in both these volumes. It will be remembered that in the first volume many of the articles were prepared by the editor, and submitted to different associate editors for revision and correction.

Half the work is now completed, as the editor proposes to cover the entire field of medicine, surgery, therapeutics, and obstetrics in six volumes.

Many of the contributions are of a high order of merit, among these may be mentioned those on "Cerebral Hemorrhage," by William Browning, "Cirrhosis of the Liver," by J. George Adami, "Diphtheria," by Drs. Northrup and Bovaird, "Catalepsy," by J. T. Eskridge, "Cataract," by Charles A. Oliver, "Dysentery," by Simon Flexner, "Infantile Myxedema (cretinism)," by Drs. Osler and Norton, "Fractures and Dislocations," by Drs. Stimson and Keyes, etc. There are some excellent colored illustrations.

But little has been observed to which exception need be taken. In the local treatment of burns, however, some of the applications recommended seem to be unduly strong. For example, the use of "carbolized vaselin (15 to 30 grains to the ounce)," "a watery solution of carbolic acid (about 20 grains to the ounce)," and "one or more grains of bichloride of mercury, preferably the former, to 1000 parts of water and kept in close contact" (Vol. ii, pp. 42, 43), if applied to a large surface, would be very apt, indeed, to speedily induce toxic symptoms.

The author of the section on "hematuria" falls into the very common mistake, as we believe, of recommending perchloride of iron locally. This application, as is well known, produces a very hard clot, which is frequently a disadvantage in many ways, not the least of which

is the tendency for the bleeding to continue in this clot, and it is then more difficult to control than before the iron was used. We believe surgery would lose nothing if this preparation were dropped entirely.

A Text-Book of the Diseases of Women. By Henry J. Garrigues, A.M., M.D., Professor of Gynecology and Obstetrics in the New York School of Medicine; Gynecologist to St. Mark's Hospital in New York City, etc. Containing 335 engravings and colored plates. Second edition, thoroughly revised. 8vo, pp. 728. Philadelphia: W. B. Saunders, 1897.

Dr. Garrigues has not aimed to produce a treatise on gynecology, but to write a book for the instruction of medical students and for those who are engaged in general practice who need or wish to know the more important diseases of women and the best methods of dealing with them. The book deals with the subject in a practical way, avoiding the history of gynecology and paying but little attention to the theory and pathology of gynecology, except in so far as causation is concerned. Preference is given to the work and methods of American authors, and to the simpler as opposed to the more elaborate surgical methods.

The author has treated very fully of the anatomy and embryology of the female genitalia, and these surely form the best foundation for thorough knowledge of gynecology. He has succeeded in producing a book which will prove very useful to the general practitioner, who wishes to do the best he can for those of his patients who do not need the skill of the specialist, and yet need gynecological treatment. An uncommonly complete index adds greatly to the value of the book.

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THE DIAGNOSIS OF NERVOUS SYPHILIS.[1]

By Charles W. Burr, M.D.,

PHILADELPHIA,

Professor of Mental and Nervous Diseases in the Medico-Chirurgical College.

Syphilis, one of the most frequent causes of organic nervous disease, is the most important, because sometimes peculiarly amenable to treatment. Since it is not safe to rely upon the statements of patients, because they may wilfully or ignorantly mislead, and since frequently serious nervous troubles occur in patients in whom the secondaries have been so insignificant as to have been overlooked or improperly diagnosed, it is important to try to establish some clinical type or types which will prove the existence of syphilis by physical examination independently of the history. This is an old subject, one that has been threshed out repeatedly, is not yet settled, and concerning which I must confess I have nothing new to say. The difficulty of the problem is inherent, and depends upon the fact that syphilis may act in either or all of three ways. First, the trouble may, so far as the nervous system is concerned, be functional, dependent, as we must assume, upon a virus circulating in the blood, and changing its chemical composition in a way at present entirely unknown to us, but not producing any gross alteration in the blood-vessels, the connective tissue, or the nerve elements. It is true that very early there may be microscopic changes in the walls of the blood-vessels, but as they are invisible save on the closest microscopic examination, and since it has not as yet been shown that the symptoms depend on these changes, but may be directly due to the action of the virus upon the apparently unaltered nerve elements, we may still use the word func-

[1] Read at the meeting of the Germantown Medical Society, May 22, 1899.

tional. Certainly many of the headaches and sleep-disturbances of syphilitics must belong in this category, for specific treatment often brings relief long before medicine could influence any organic pathologic process. Secondly, there may be true syphilitic lesions producing later secondary softening, indurations, or degenerations. Thirdly, there are the so-called parasyphilitic diseases, which, as Mickle and others have shown, "are products of its action, under its influence, and without it, in all probability, would not be present; but although thus proceeding from syphilis are not of a syphilitic nature." They are the last term of a long series,—the results of syphilis, not syphilis itself. Locomotor ataxia is the best example. I shall say nothing of these parasyphilitic affections.

The symptomatology of syphilis is the larger and the more complex, because it is not a local disease, affecting only some one small localized portion of the nervous system, but is wide-spread in distribution. Disease in one part may produce symptoms so overwhelming as to make those due to lesions elsewhere appear of little importance, or even cause them to be overlooked; but if sought for, they will be found. Take hemiplegia, for example. It is not unusual in the common type of palsy, occurring in patients with long-standing chronic interstitial nephritis and due directly to the rupture of a blood-vessel, to have the stroke come without any forewarning, and to find, on examination, only the symptoms proper to the hemorrhage. This is rarely the case in syphilitic sudden hemiplegias. In them the history almost always tells, and the examination frequently reveals symptoms and signs which prove not only the local disease causing the hemiplegia, but several lesions causing optic nerve disturbance, some trouble on the unparalyzed side, some cranial nerve palsy, mental aberration, abnormal reflexes, difficulty in control of the bladder, or speech defect. Though we speak clinically of brain syphilis and cord syphilis, cases in which one organ alone is affected without disease of the other are extremely rare. Usually not only are there several foci of disease, but they are present in both brain and cord. Indeed, multiplicity of symptoms dependent upon widely distributed lesions is one of the most characteristic signs of syphilis. In no other disease, except hysteria, do we meet with such a gathering together of non-related symptoms, though, of course, the grouping is very unlike that seen in the latter condition.

As has been said, it is rare for serious symptoms to appear suddenly and without premonitory signs of trouble, but frequently the warnings are neglected by the patient, are regarded as mere trivial matters, and he does not realize that he is ill, does not put himself under treatment, it may be, until irreparable harm has been done. For example, a young gentleman suddenly, and while, as he thought, in

fair health, became delirious and violent, and a few hours later stuporous. When examined, he was in absolute coma. The right side of the face was a little palsied. Breathing was stertorous. So far the symptoms were those of an ordinary cerebral hemorrhage, but the deep reflexes were much increased, ankle clonus was present on both sides, and there was beginning optic neuritis. None of these should occur a few hours after the rupture or blocking of a blood-vessel. Their presence, the absence of disease of the heart or kidneys, and his youth narrowed the diagnosis to local brain syphilis or new growth. The free use of mercurial ointment was followed by the return of consciousness in about twenty-four hours. Soon after, when the aphasia present at first had passed off, he said that he had had a chancre about two years previously; that for several months he had suffered from diffuse headache so severe as to prevent sleep, and that later he had begun to walk a little stiffly and to have some trouble in micturition. Examination showed a not severe spastic paraplegia. Notwithstanding all this, he had not regarded himself as a sick man. Under specific treatment he soon regained apparent perfect health.

Headache is probably the most frequent cerebral symptom. It occurs both in the secondary stage, during the syphilitic fever, and later. Its severity and paroxysmal character in the so-called syphilitic intermittent fever may increase the difficulties of diagnosis, if the physician is not on the watch for it. The usual headache is more or less persistent with acute exacerbations of extreme violence. The exacerbations are periodic, and, according to Gray and others, the periods may be regular even to the hour. The pain is most often worse at night. It is remarkable that the headache of gross organic brain-disease frequently ceases immediately after the appearance of a palsy or the occurrence of a fit. Probably every one who has had a chancre suffers some from headache even though he may never experience any other nervous symptom.

Insomnia is the next most frequent symptom. Sometimes it is the direct result of the intense headache, but not infrequently it occurs in the absence of pain, and is a pure inability to sleep, due to cerebral irritation. Patients often say that at night their minds become active and excited, and for that reason they cannot sleep. As a rule, the things thought are worthless, a mere jumble of ideas, without apparent association, and leading to no end. The mental excitement is not unlike that frequently seen in febrile states from any cause, and is also similar to that following the use of stimulant narcotics in certain people. Fever is a common pseudo-mental stimulant. In the place of insomnia there may be intense somnolence, so that the patient finds it difficult to keep awake, and may fall asleep even while at active work.

In the secondary stage, before any gross organic change has taken

place in the nervous system and more rarely in the later stages, there may occur, according to many writers, a true syphilitic neurasthenia, not due to disorders of nutrition resulting from the excessive use of antisyphilitic remedies, nor from the psychic disorders aroused by apprehension and remorse. That there may be serious deficiencies of nutrition from functional, or as it may be better to say, from chemical disturbances in the life processes of syphilitics goes without saying; indeed, even later in the course of the disease, when there are gross lesions of the nervous system, it is not they which cause the general symptoms, but rather some unknown poison or poisons circulating in the fluids of the body, and it is at least questionable whether it is wise to call conditions of general weakness occurring in syphilitics by any other name than syphilis. Neurasthenic states are present in cancer and phthisis, but one does not speak of a cancerous or tuberculous neurasthenia.

A characteristic of syphilis, one which bears some resemblance to hysteria, is the fleeting nature of certain symptoms. It is not uncommon for a patient to have a transitory oculomotor palsy, then a temporary aphasia, then a series of epileptiform convulsions, then a hemiplegia or monoplegia, or any set of them in any order, and finally, it may be, die of some non-syphilitic affection. No other disease has the power to make such frequent and repeated assaults, now on one part of the nervous system, now on another, and in none has nature or medicine such power to successfully withstand the assaults or even, as sometimes happens, overcome them. Other organic diseases either stand still or grow progressively, though it may be slowly worse or improve somewhat, and so remain. Syphilis may keep a man in a constant seesaw between apparent fair health and serious disease. This is, of course, not always true,—the progress towards death may be speedy and certain, or the most serious symptoms may disappear and the patient maintain good health for years.

So far we have not found any clinical type, any one group of nervous symptoms, of which we can say with certainty syphilis is the cause. We have found only that headache of a certain kind, insomnia and somnolence, fleeting palsies and aphasias, and multiple symptoms due to scattered lesions point towards syphilis. Pathognomonic symptoms we have not found. They have been sought for for years, and with but indifferent success. Erb came nearest to the goal in his so-called syphilitic spinal palsy. Kuh, quoted by Dercum, describes it thus: It begins with a slowly increasing weakness and stiffness of the legs, frequently associated with paresthesias. Vaguely localized girdle sensations are complained of often. There may be hyperesthesia or actual pain in various parts of the body. Serious objective disturbances of sensation do not occur. Weakness of the detrusor is the most

frequent symptom referable to the bladder. Constipation is much more frequent than rectal incontinence. Not rarely there is progressive sexual weakness, very rarely priapism. The final picture is a spastic paraplegia,—a well-developed spastic gait with but little palsy. Often one leg is affected more than or before the other. Notwithstanding the spastic gait muscular tension is low. The knee-jerks are increased immensely, ankle clonus and not infrequently patellar clonus is present. The skin reflexes are not involved. Bed-sores and cystitis are rare. This group of symptoms, though not pathognomonic, points very strongly towards syphilis. Unfortunately, spinal syphilis is not confined to this one type. It manifests itself in many ways, and the safest rule is to treat a case as one of syphilis whenever there is a mimicry, a caricature, but not a true picture of any of the well-recognized spinal-cord diseases.

We have progressed no further in the differential diagnosis of idiopathic epilepsy and syphilis than the old law of Fournier, which, briefly stated, runs that epilepsy never begins after the thirty-fifth year. This is only a working rule, not an absolute law. Given, then, a man over thirty-five years old, who begins to suffer from general epileptiform convulsions, and does not present the symptoms of brain tumor, it is safe to treat him for syphilis. If he suffers from the general symptoms of a cerebral new growth, headache, vomiting, vertigo, and optic neuritis, the ground is less sure, for a gumma gives, of course, the same symptoms as any other tumor, and the therapeutic test is not an absolute guide. Many non-specific tumors are improved by iodide and mercury, and some gummata are not. Medicine cannot cause an old degenerating gumma to be absorbed. Very great improvement or apparent cure almost proves syphilis.

The mental symptoms of syphilis are manifold. Acute mania or melancholia may occur before there are any gross organic nervous changes, and I must confess I know not how, from the symptoms alone and in the absence of a history or the physical signs of infection, to diagnose them. Some of the more chronic dementias can be diagnosed by the coincident brain and spinal-cord symptoms. The differential diagnosis of a syphilitic pseudo-paresis from paresis may be easy, difficult, or impossible. In the first the course is irregular, in the second it is steadily downward, interrupted it may be, but always downward. In syphilis the symptoms point most directly to local lesions, less directly to diffuse disease. In paresis the reverse holds. Transient palsies are more frequent in syphilis, tremor in paresis. There are always speech-disturbances in paresis, not always in syphilis. In syphilis the delusions are most often depressive, there is hypochondriasis and mental depression. In paresis they are usually expansive, and the patient is too well content with himself.

REMOTE RESULTS IN ARTISAN'S PALSY.[1]

By F. Savary Pearce, M.D.,

PHILADELPHIA,

Instructor in Physical Diagnosis, University of Pennsylvania ; Chief of the Medical Dispensary of St. Agnes's Hospital.

The subject of occupation neuroses has been pretty widely written upon, and there has gradually come to be a larger number and variety of manifestations of this affection. That the "wear and tear" of modern life on the nervous system plays the leading *rôle* in etiology; also that the local use of a member in constant application within monotonous limited measure in an overworked part of man's economy is the exciting cause added to the predisposition to neurosis entailed by the precedent neurasthenia, I wish to bring out. Thus having a predisposing and exciting cause in a large majority of the cases of so-called artisan's palsy, the broken link in the chain of nervous impulses must set up a wider-spread breach of continuity of function than is manifest in major part by the most affected member; and added to these two primary pathogeneses in the light of recent studies in metabolism must be placed the irritation from a variety of metabolites formed in excess or improperly eliminated. And then even the leucomaines of the body may be made positive of an added irritation to a central or peripheral nervous system thus made vulnerable to disease. The recent paper by Professor Chittendon[2] adds much light to this uncleared ground.

It is manifest, too, that we have a much simpler class of artisans' palsies than those implied as produced by the above complex, where the disorder is almost entirely of a local nature, due to the fact that the central nervous system is not called upon for an equal expenditure. Here we have no neurasthenia, but a paresis with or without irritability of muscles, but always, however, with an irritable set of nerve-twigs in the part affected. These latter we may divide into muscular, neuritic (neuritis or not), and vascular, depending upon the time, extent, and anatomical structure most injured, will we expect to get cures in proportion to such destruction of the integrity of the arm involved. The whole subject is complex and of tremendous importance to medicine.

Muscular Cases.

These are they which come from rather sudden violent over-use of the muscles, as in case of a brakeman under the writer's care, who,

[1] Read before the Pennsylvania State Medical Society, May 18, 1899.

[2] "Some Facts and Theories relating to Auto-intoxications." Annual address before the Pathological Society of Philadelphia, April 27, 1899.

from constantly and forcibly turning the wheel on top of a car, developed an irritability and painful condition of the flexor muscles of the forearms. There was no nerve-trunk tenderness, but a general muscular soreness, and on direct auscultation a gritty sound was elicited, due to a coagulation necrosis of the serous fluid. There was no heat in the tissues, but it might be designated an incipient myositis. This man recovered promptly under rest and massage within six weeks.

The case of a street-car driver, with the same condition affecting the right forearm, has been reported by the writer, in discussion of this subject in another place (*Philadelphia Polyclinic,* "Transactions of the Philadelphia County Medical Society," January 29, 1899). Both of these men remain well in spite of continued work in the same employment.

Neuritic Type.

Here we have a peripheral neuron irritability which may pass over the border-line to neuritis, of subacute type. This class of cases is manifestly severer and yet hopeful for complete cure, if taken in time. It is essential to quit the employment which has been the exciting cause, to use descending galvanism of a mild current (six to eight milliampères), massage, and rest. If the local tenderness indicating neuritis exists, then cold or counterirritation may be necessary. In the last class, depressor motors can be advantageously given to quiet the general irritability, and thus gain time in recovery. The large class of these cases come from among beginning telegraphers who happen to have little subcutaneous padding of fat in the forearm or where the anatomical mechanism is such as to permit easy pressure on the ulnar nerve, in the faulty position of allowing the forearm to rest upon the table when employed at the instrument. The instance of a telegrapher mentioned in the above recited discussion, together with a number of his colleagues, have since that time been constantly observed, and where the advised proper position has been maintained while at work, or where a well-made pad fitting about the elbow also has been worn while at work, recurrence has been prevented in the half-dozen cases.

Arterial Cases.

That this should be given as a type of artisan's palsy, *per se,* may be considered dubious from a scientific classification of neural disorders, but that arterial or capillary involvement is the primogeniture of a certain number of disabilities of the arms in artisan's palsy, is proven by such cases to be detailed. Even then, we are not going outside of neurology, admitting that irritation of blood-vessels in a slight mechanical way from without must involve the nerve twigs (nervo-vasorum) of these peripheral blood-vessels. In such cases, there are

none of the cardinal symptoms of writer's cramp, no spasm, or paresis of muscles, but paresthesia of the fingers and forearms; finally, with delayed sensation of all forms, seldom tenderness, and accompanied by cold, clammy condition of the extremities so affected. These cases are distinguished by the writer from acroparesthesia for this reason; there is evident cause in a peripheral irritation setting up the trouble, and in arteriosclerosis being excluded; also the younger age of the patient (20 to 30) and therefore not the classic disorder seen most frequently in women in the climacteric. These arterial cases may be subdivided into neurasthenic and non-neurasthenic.

The predominance of cases are in the first category as exemplified in A. B., overworked for years, who presented, along with mild simple neurasthenia, the syndrome of feeling of numbness in the finger-tips extending up the wrists and posterior and anterior aspects of the forearms, without tenderness of nerve-trunks, without muscle soreness even, so frequent in artisan's palsy. This phenomenon had been brought about very positively by the irritation of the silk and other dress goods which had almost constantly been held between the finger and thumb or in pushing the goods, all in the effort required to feed the sewing-machine on which the woman was constantly employed as an operator for eight years. This woman was anemic, had loss of appetite, general lassitude, but her main complaint was of constant annoying numbness described. It should be said there were no eclectical changes in the muscles, and there was no distinct anesthesia at any time. The treatment in this case is the use of Blaud's pills, five grains, thrice daily, the semi-rest treatment, with full diet, also the local use of galvanism and massage to the fingers and forearms. The prognosis in such a case is much more favorable as to cure in this woman than in the cases of artisan's palsy of the typical type. In the case detailed, we have to deal with the concomitant neurasthenia, but as this is both neural (overworked), and hematic, we can promise pretty certainly prompt recovery within a few months.

Cases in which the trouble is in the vessels alone, without arteriosclerosis, will, of course, recover with stopping the occupation productive of the irritation, and the local measures suggested above. The individual element, plus the ancestry in a given case, must always be seriously weighed before giving expression as to possibility of rapid cure in these apparently simple forms. Where the cause is five to six months in producing the effect of this paresthesia, then we can safely say that the irritation to the vasomotor nerves is, of course, more profound, and while this does not explain the symptoms scientifically to one's mind, yet such irritability, following a half year's excitement of the same, means that an equal time or more shall be had for cure under the most careful treatment. If prolonged beyond a year, it has

been my experience that in these young people even, the condition becomes chronic, amounting to a remote acroparesthesia, in which they are similar to those cases in older folks where no such etiology from overuse is discoverable. It is in these arterial artisan palsies, as we have termed them here, where the remote results are particularly good. In such cases the arterial tree is normally elastic and resilient; their nutrition is good, and no sclerosis being present, the local measures indicated, in addition to the dietetics suited to the diathesis, hydrotherapeutics especially of alternating hot and cold douches down the spine for a half-dozen applications daily, will prove of the greatest invigorating value, and by reflex action, so-called, divert the blood for more healthy metabolic and eliminative function. Sensory disturbance is also thus much relieved.

This latter phenomenon of "tingling" so possesses the patient who has been for a few months affected, that the psychic increment predominates. He fears paralysis and becomes melancholy. Then it is that the patient may become extremely hypochondriacal, a most difficult condition to battle. If possible, in such, change of scene should be insisted upon, especially to a dry climate and intermediate altitude (1500 feet). Should this not be available, suggestion is the last resort which is successful in proportion as the physician is able to impress his patient. We must keep clear at all times that any symptom long continued, as paresthesia, may transfer itself in part from physical to psychic place in *any* malady,—not only in neurotic people. How many persons in every walk of life are controlled by imaginary ills.

With the kind permission of the attending physicians we have gone over fifty of the cases of artisans' palsies occurring at the Orthopedic Hospital and Infirmary for Nervous Diseases, dating over some twenty-five years.[1] Many of these are telegraphers overworked, neurasthenic and anemic. It is from this class of people we cannot enforce, from the first, the hygienic requirements of rest, change of scene, and massage. They have to continue at their arduous tasks of overstrain. These are the terminal—one might say—class of cases where the central and peripheral neurons are exhausted; again, the stomach gives out from this same lack of central energizing influence, not from any stomach disease. Gastrectasia, often developing hyperacidity of the stomach, is among the sequelæ, the blood is acidulated through the portal circulation, and a vicious circle of catabolism is set up most difficult to reclaim back to normal functionation. At times sugar is found in the urine. These men can stand but little nervous strain, and if the other member not affected with the palsy is made to replace the affected

[1] Some of the cases observed are included in the classic article by Dr. Morris J. Lewis on "The Neural Disorders of Writers and Artisans," Pepper's System of Medicine, Vol. V, pp. 504–542.

arm, it will be found to be very much more susceptible to a palsy in which the spasm stage is short-lived and the paresis fulminating in onset.

Then the influence of mind over matter is brought out. This last class of case, than which no sadder picture presents in so-called functional disease of the nervous system, is often styled cranks. The sudden incoming of financial means of support will often add that mental increment so often deficient in neurasthenic people, and frequently in a surprisingly short time, a few months, with the change of scene, and a regulated form of exercise, horseback riding preferably, we have a well man. Still in these cases the fact that going back to the same work will cause a relapse, proves that the safest method to adopt in them is not to permit even employment of the same nature. Here it is in place to say that the "Jack-of-all-trades" man has his redeeming feature, and one who has had general training, mental and physical, will have better chances for the competition for the successes than his much narrower but perhaps more skilled genius in one direction. This subject leads into psychological lines, and seems to me much towards rational proof that the genius is often narrower in many ways, on account of untilled soil in protoplasm only awaiting cultivation.

I have in mind the case of a man with telegrapher's palsy of the terminal type described, who had become quite a subject to recurrent melancholia. On being thrown into Western life with full zest and using his muscles in the grosser and larger movements of the "cow-puncher," he does not know "he has any nerves"; although, as proven by one experiment, there can be no doubt that a permanent irritability of the nerves exists. Now, after five years of out-door life, the patient seems perfectly well as to his palsy, so that the remote result here is what can be called a cure; for, after all, cures of artisan's palsy of neural type bear a simile to what we designate cure in Pott's disease, where susceptibility, of course, exists for relapse upon proper cause.

Another case, Mrs. M., aged 40 years, dress-maker by occupation, climacteric established two years ago, has complained of numbness in the right and in the left hand, following the use of the fingers in that pushing the goods through her machine. The association of rheumatism several years ago, and its alternation with "numb feelings" being exaggerated; also the finding of excessive uric acid in the urine, shows a close relation between external irritation (sewing) and internal irritation (uric acid), coexisting in the cause of some of these cases. This woman has gotten immensely better of the paresthesia under the use of lithia, five grains three times daily, and with the cutting off of her employment. We see no reason why she should not entirely recover.

The case of M. L., female, aged 29, who worked at hemming from her nineteenth year to her twenty-eighth year, has had, during the last few years, quite a marked paresthesia in the fingers and aching pains up the forearms as far as the elbows. She has become neurasthenic besides. This case presents no muscular or nerve-trunk phenomena.

Case of W. S., male, aged 24, reporting to the Orthopedic Hospital in 1894, was the subject of telegrapher's neurosis, in addition to which there was some disturbance of equilibration, inasmuch as he would pitch forward with his eyes closed; gait was very unsteady. Also complained of precordial distress and syndrome of neurotic symptoms showing a wide-spread irritation of the nervous system. The eyes were, of course, looked to in the careful study of the case by Dr. Wharton Sinkler. Dr. de Schweinitz discovered nothing more than a mild grade of hypermetropia. The man was put on semi-rest and tonic treatment, but after vacillations in the course of his neurosis, on the 5th of May, 1899, was greatly improved, yet in the susceptible condition which we learn to recognize by experience, the precursor of possible "nervous-break-down." The remote result in this case (now five years) will depend entirely upon the ability of the patient to carry advice as to change of scene, exercise, philosophy.

Miss E. H., aged 24, writer's spasm in right hand. Three years ago began to feel tired after work. She complained much of headache, especially during the menstrual periods. The left arm is unaffected, sensation in the right arm is normal, but there is considerable muscular spasm on effort. Previous to this artisan's affection, this patient complained of muscular rheumatism of a subacute type with every change in the weather, when the pain would be especially located in the right arm and calves of legs. May it not be that toxins plus pathologic products of metabolism, such as uric acid, alloxan, or other bodies, have been set to work by the overuse of the member; and that it would likely eventuate in production of left-arm palsy were this patient to overuse the left arm. This may, no doubt, explain a number of these cases of transitional palsy, though not definitely proven. [NOTE.—Since this paper was read a case very near proof of the above hypothesis has been seen in A. B., aged 24, who was a "writer" and had complained some of weakness, at times, of right wrist. During a recent severe septic typhoid attack and with supposed pressure on right hand while in delirium she developed complete wrist-drop alone on the right side,—*i.e.*, in the predisposed member.]

The subject of cause and recurrence of many cases of neurasthenia, I am satisfied, are due to peripheral irritations. For instance, it is not uncommon to find hay-fever patients alternating with neurasthenia as in going to New Mexico at even the moderate altitude of 2000 feet.

On the other hand, I know a lady, aged 65 years, a chronic sufferer from hay fever, who, on going from Utica, New York, to San Francisco, was cured immediately, only to be a sufferer from acute rheumatism. Undoubtedly, climatic conditions played an important *rôle* in the transition from one malady to another, but that we should consider the pathogenesis the same sort of an irritant is to be emphasized. Much here is to be learned in the study of neuroclimatology of disease.

Conclusions.—Without detailing further cases, the author wishes to state that an analysis of all cases at the Infirmary for Nervous Diseases was begun. During the search for late data within the past year that the subject was in hand, the impossibility of getting these records was forced upon the writer. Nevertheless, from observation of the cases who did report when notified, and from the fact when the patient recovers he is very inapt to return, we are led to believe that many more cases of artisan's palsy recover up to a standard somewhat less than the normal health of the part within a few years, and that with the care forced upon them as a necessity, these people live lives of usefulness in the same vocation; perhaps half the number. Of the remaining half, without ability to formulate statistical tables, I would say one-third of *bonâ fide* cases of artisan's palsy entirely recover, more remotely depending upon duration. These are all of the neurotic class referred to in the division made.

That a large number of chronic nervous diseases are capable of much improvement has been the experience of the writer. Investigation here undertaken has proved to his satisfaction that persistence in treatment of artisan's paralysis by means of rest, massage, galvanism, offer a better percentage of recoveries than at present given credit for. An average of five years seems to be the fair number to allow for cure in the average case of neuritic type. Where the central nervous system is involved, we have the terminal stage of irritation (neurasthenia) most unpromising for complete cure.

The muscular forms offer the most favorable prognosis for quick recovery; here no remote conditions need be entertained. Stop the cause and recovery will promptly follow. The hybrid cases that I have termed arterial type are also very persisting ones. In proportion as arterial sclerosis is absent and external irritation is prominent will the hope for complete cure be gratified within six months to a year under treatment. Where the disease lasts beyond a year, remote effects are of arterial sclerosis, probably lit up by the vasomotor irritation of such long duration. And the resultant laying down of lime salts will, of course, continue with some remissions, as is the history of this arterial degeneration. The use of antirheumatics, such as iodide of potassium, is of great value in this class of cases, also the use of nitroglycerin,

ergot; then the use of antilithics, or even nutrients, as cod-liver oil, will be paramount. The psychology is to produce a peculiar morbid state of depression, the writer also wishes to emphasize, so that in proportion as the physician holds the confidence of the patient through those vague metaphysical laws will he be sure of better prognosis. The subject of climatoneurology needs more scientific consideration.

DESCRIPTION OF AN ADJUSTABLE BRACKET FOR THE REID OPHTHALMOMETER.[1]

By Charles A. Oliver, A.M., M.D.,

PHILADELPHIA,

Attending Surgeon to Wills' Eye Hospital; Ophthalmic Surgeon to the Philadelphia Hospital, etc.

After several years' trial with the various forms of ophthalmometers (keratometers) and much experimentation with the Reid contrivance (by far the best of them all), I have found that for office use I have been able to obtain much better results as regards both axis and degree of corneal astigmatism by having the instrument mounted upon an adjustable table, which, by the employment of four levelling screws and a circular form of spirit-level, can be kept absolutely level in all horizontal directions during the examination; thus insuring a greater degree of certainty of answer in reference to axis than when the instrument was held in the hand.

The apparatus practically consists of a rigid, vertical, steel rod holding a sliding bracket, upon which there is fixed a combined levelling table containing the instrument.

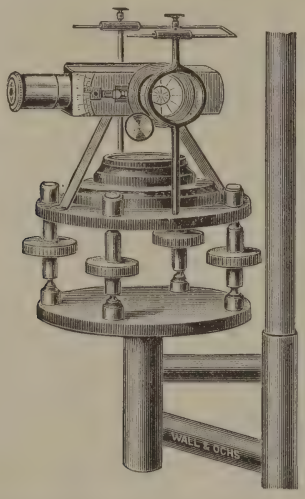
The ophthalmometer itself is held in position by two angular supports that are bolted to the upper table, and is so arranged that a mere pressure by the hand will release it from their grasp, thus making it portable and allowing it to be used as originally intended.

Rising from the circumference of the table there are two fixed rods, holding on their upper tips a pair of horizontally placed sleeves, through which can be slid a fixation-bar that can be bolted into any position that may be desired by a few turns of two screw-heads that pass through threaded openings in the upper parts of the sleeves. The

[1] Read before the December, 1898, meeting of the Section on Ophthalmology of the College of Physicians of Philadelphia.

rod that is placed on the registering side of the instrument contains a large circular area, which is situated just opposite to the position of the translucent dial.

Situated on the top of the table is a carefully constructed, broad, circular level composed of a metallic air-tight chamber, covered by glass. In the centre of the glass cover is an etched circle of one centimetre diameter. This chamber, with the exception of an area which is of the same size as that of the etched circle on the glass cover, is filled with alcohol,—thus making a bubble of air which, if the table be level in every horizontal direction, will be situated immediately beneath, and rendered exactly coincident with the etched glass area above. At the periphery of the table, between the circular spirit-level and the edge of the table, there are four fenestrated, threaded heads passing through the entire thickness of the table itself.



Adjustable bracket for the Reid ophthalmometer.

Beneath the upper tilting or instrument and spirit-level holding table there is a levelling or fixed table fastened firmly to an upright supporting rod. Upon this table four immobile pointed heads are situated.

Between the two tables, loosely supported on the four pointed cones of the lower table, there are four grooved, broadly headed levelling screws that pass through the fenestrations in the upper table, so that the slightest turn given to any one of them will cause the bubble of air in the spirit-level to change its position.

In the latest model of instrumentation (not shown in the sketch) there is a central spiral spring firmly held in an upright position be-

tween the two tables, by which means the upper table is kept securely fixed in whatever position the levelling screws may have placed it.

To the ophthalmometer itself there has been added (which cannot be seen in the sketch) a scale by which the exact axis of the meridia of the greatest and the least corneal refraction can be immediately read off.

If desired, the instrument and the levelling tables may be supported on an optometer or phorometer bracket or tripod, or they can be screwed to the top of a table or clamped to the back of a chair, thus making them very light and easily transportable.

To use the instrument, the vertical rod is bolted to a window-frame in such a way that by a mere turn of the bracket either eye may be studied (or if so desired the window-curtain can be drawn and either a source of artificial illumination substituted for the daylight or, as the author prefers, a small adjustable aperture in the opaque shade may be opened and the diffuse daylight allowed to fall directly upon the disk.

The patient being placed in position and the ophthalmometer properly adjusted, the work is proceeded with in the ordinary way.

RESECTION OF A PORTION OF THE SIGMOID FLEXURE FOR THE CURE OF RECURRENT CARCINOMA.

By Edward Martin, M.D.,

PHILADELPHIA,

Clinical Professor of Genito-Urinary Diseases, University of Pennsylvania; Surgeon to the St. Agnes, Philadelphia, and Howard Hospitals.

On the 8th day of June a cachectic looking woman, 49 years old, presented herself at St. Agnes's Hospital because of a slightly movable intra-abdominal tumor placed on the left side, just above the crest of the ilium. This patient had vomited once, was obstinately constipated, and steadily losing in strength and weight. This deterioration in her general condition she had noticed for several months. She stated that one year before admission into the hospital she had been operated upon, by Dr. E. E. Montgomery, for cancer of the uterus, this entire organ having been removed.

Five days after her admission to the hospital the abdomen was opened, and a hard mass was found, the size of a man's fist, surrounded by omentum and broadly adherent to the parietal peritoneum on the left side. Four segments of gut were involved in this mass. The

omental apron covering the tumor was cut across and the parietal peritoneum with the subperitoneal tissue was dissected up and lifted forward with the mass. The infiltration was found to involve about three inches of the midportion of the sigmoid flexure through its entire circumference. The other two gut segments entering it were derived from the small intestine, a loop having become adherent to the carcinoma and having been secondarily infiltrated. This loop was dissected free; the infiltrated part of the wall, an area about the size of a quarter, was resected, and the opening in the small intestine was closed transversely by a Lembert catgut suture. The main tumor together with the involved gut was then removed, together with a V-shaped piece of mesentery containing two or three small, hard, lymphatic glands. End-to-end anastomosis was performed by means of catgut sutures, particular attention being devoted to close apposition of the bowel segments lying between the mesenteric layers. Finally the mesentery was closed and the abdominal wound was sutured in layers without drainage. The patient made an uninterrupted recovery.

It is interesting to note that in this case the recurrence occurred in the gut and not in the periuterine tissues or the post-peritoneal lymphatic glands; the latter were searched for but were not found to be obviously diseased. It is probable that at the time of the operation a portion of the intestine was adherent to the uterine neoplasm, and that this was stripped without being resected. The end-to-end suture was easy and fairly rapid; though the operation required two hours for its completion, the greater part of this time was spent in freeing the mass from its adhesions and checking the bleeding incident to this procedure. Because of the amount of fat lying between the mesenteric layers, anastomosis by means of the Murphy button or by the La Place forceps would, I think, have been more difficult, and possibly less accurate, than that accomplished by the simpler but somewhat more tedious process of direct suture.

A Physician's Gold Fetters.

One of the earliest fees for medical treatment of which there is any record is mentioned by Herodotus, who says that Darius gave the slave Democedes two pairs of gold fetters. The usual fee at that time in Greece was very small, about sixteen cents in our money, yet there were notable exceptions, as when King Antiochus paid $150,000 for medical treatment, and later, when the Emperor Claudian paid his physician about $20,000 a year. The latter was twice the annual income of the eminent physicians of that time.—*Medical News.*

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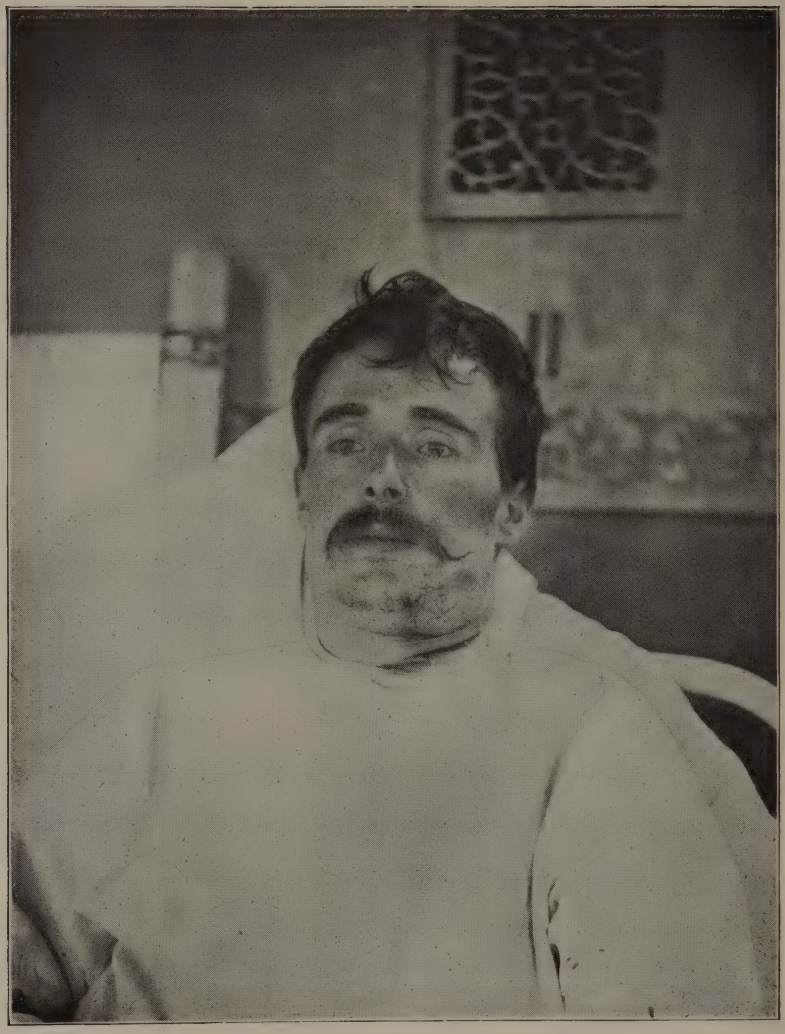

Acute sub-maxillary enlargement (salivary gland) during typhoid fever.
Recovery without suppuration.

BILATERAL SWELLING OF THE SUBMAXILLARY (SALIVARY) GLANDS IN TYPHOID FEVER, WITHOUT ENLARGEMENT OF THE PAROTIDS.[1]

By D. J. Milton Miller, M.D.,

PHILADELPHIA.

Swelling and suppuration of the parotid gland is an occasional, although rare, complication of typhoid fever. Osler states that it was present in forty-five of the 2000 Munich cases, and Hoffmann ("Untersuchungen über die pathologisch-anatomischen Veränderungen beim Typhus Abdominalis," Leipzig, 1869), in three years' practice in the hospital of Basel, saw but nineteen cases among 1600 typhoid patients.

Of even less frequent occurrence are instances where the swelling is limited to the submaxillary glands alone, the parotid and sublingual remaining uninvolved. A rather thorough search of most of the systematic treatises on the practice of medicine and of special works on fevers yielded but one example of this condition. For this reason it seems appropriate that the following case be put upon record:

George H., aged 25, was admitted to the Episcopal Hospital on the fourteenth day of typhoid fever. The attack was of mild character, requiring only eleven plunge baths. On the twenty-seventh day of the disease, after the temperature had been normal for two days, the left submaxillary salivary gland began to swell, without rise of temperature. It rapidly became painful and indurated, with slight redness of the overlying skin. Four days later enlargement of the right submaxillary gland was noted. By this time the left gland had increased considerably in size and induration, presenting a mass which, from its shape and location, left no doubt as to its origin in the salivary gland. The right swelling also became larger, but never attained the dimensions of the left. With the enlargement of the left gland the temperature rose to 101° to 102° F., falling in four or five days to the normal, after pursuing an irregular course. Not the slightest pain in, or swelling of, the parotid glands was at any time observed. By the fortieth day the swelling on both sides had completely subsided. At no time was there any evidence of suppuration. The treatment consisted in the free application of a 10-per-cent. ichthyol ointment.

[1] Reported to the Section of General Medicine, College of Physicians of Philadelphia, May 8, 1899.

The only other reported case which I have been able to find, in which the submaxillary glands were alone involved in typhoid fever, is one of Hoffmann's (loc. cit.): A woman of 29 years, in whom swelling of the left submaxillary salivary gland began on the fourteenth day of the disease, and in a few days suppurated. The patient died. At the autopsy, in addition to the diseased gland, the right submaxillary was found increased in size and hard. Both parotids were somewhat hardened, but no enlargement during life was noted. According to Hoffmann, in addition to acute swelling and suppuration of the parotids, other changes are found in them, in the other salivary glands, and in the pancreas, in the course of typhoid fever. These changes consist in increased tension and hardness, due to a general proliferative process in the parenchyma of the glands, with retention of their contents. Hoffmann believes that the changes referred to are a very constant accompaniment of the typhoid process, and that parotitis is simply a decided increase in changes that usually occur in typhoid fever. The reason why the parotid is almost always affected, while the other salivary glands escape, is attributed, by the same author, to the close and tough fascia which surrounds the parotids, whereby the swelling of the confined gland produces extreme pressure and consequent inflammation. The date of Hoffmann's observations (1869) naturally, does not take into consideration the action of bacteria, which, in the light of present knowledge, must, undoubtedly, play an important *rôle* in inducing the changes described by him.

Chloride of Lime in Gynecology.

Cheap, non-toxic, non-caustic, a solution of chloride of lime will be found more effective than sublimate as an antiseptic, while it dissolves and sweeps away the mucous secretions, instead of coagulating them, like sublimate, creosote, nitrate of silver, etc., thus forming a protective coating for the micro-organisms in the depths. Prepare by adding 100 grammes of well-preserved lime to 1200 grammes of water; shake, let it settle for an hour, filter into a litre-bottle of black glass, cork with an emery stopper and paraffin. One glass of this "strong solution" is added to nine glasses of warm, boiled water for the "ordinary solution," which is about as strong an antiseptic as a 1 to 1000 solution of sublimate, and is effective in vulvo-vaginitis, cervicitis, inoperable cancers, etc., shortens the course of female gonorrhea (Pettit and Bonnet), and is especially successful in endocervicitis with viscid secretions.—*Presse Médicale*, December 21, 1898.

THE HISTORY OF MEDICINE.[1]

By David Riesman, M.D.,

PHILADELPHIA,

Professor of Clinical Medicine, Philadelphia Polyclinic; Demonstrator of Morbid Anatomy and Pathological Histology, University of Pennsylvania.

Gentlemen,—While casting about for a suitable theme on which to address you this evening, the thought came to my mind that the members of the Stillé Medical Society, since they had heard me so often on purely medical subjects, might prefer it if, on this special occasion, I should select something not strictly pertaining to morbid processes. For this reason I have chosen a subject which, although it comes within the pale of medicine, does not bear directly on its practical side, —a subject of the deepest interest,—viz., the history of medicine.

It is not my purpose, were I able and were the impossible feasible, to sketch in the time that I may with propriety consume the rise and development of medicine from its remote beginnings, at the dawn of history, to this day of wonderful progress, to this era of antitoxins and fearless surgery. I want rather to point out, if I can, the value of a study of the history of medicine, its importance, and its ineffable charm, and to arouse in you, my hearers, a longing for historic knowledge, a love for medical traditions, and a hero-worship for the dead masters of our scientific art.

Viewed from all possible stand-points, history, it seems to me, is the most interesting of all mental pursuits; for it reveals to us, if properly interpreted, the intellectual development of the human race. It is the counterpart of the study of biology and paleontology. These sciences teach us the morphologic development of man; they reveal to us the form-phases through which he has passed to reach his present corporeal state. Now, history does the same for the intellect. It lays before us the thought-phases which the human mind has traversed from its unthinking infancy to its present state of lofty mental vigor and broad culture.

History, be it remembered, is not merely a recital of facts and an arraying of dates; it is much more. It is philosophy; as some one has said, "History is philosophy teaching by example." If historic study —general historic study—is necessary for the fuller understanding

[1] An address delivered before the Stillé Medical Society.

of the thoughts, the actions, the aspirations of man in the past, and of contemporary man, it follows inevitably that, in order to comprehend any branch of intellectual endeavor, the history of that branch must be known. This is true of the arts and the sciences. Men often satisfy themselves with the present; but the present is not seen rightly unless it is illuminated by the past. He is not the ideal scientist who fails in his appreciation of the labors of his near and remote predecessors.

I can conceive the pleasure derivable from the study of mathematics, and can understand the devotional enthusiasm of one engaged in solving the profoundest problems of astrophysics; but only when, with such deep insight, there is joined in the mathematician's mind a knowledge of the history of his science—when he is conscious of the invaluable labors of Euclid, of Copernicus, of Kepler, of Newton, without which his own triumphs would have been impossible—does he reach the highest acme of scientific attainments.

Goethe has said, "The history of a science is the science itself." This is true, in a large measure, of medicine; but we, leading, both as students and as practitioners, a life of intensest activity, are apt to forget, or to overlook, the debt of gratitude we owe to our predecessors; a debt that reaches back to the very earliest struggles of the healing art. We have a right, as members of the most progressive of all professions, to feel proud of the achievements of medical science in this age; but we owe it to ourselves to give credit for the noble work of those who preceded us and prepared the way. In this respect, we are far behind our colleagues of the other professions, who treasure and cherish the names of the leaders gone before. In the law, the relation of the present to the past is more clearly emphasized, and a lawyer who loves his profession knows not only the statutes and decisions in force to-day, but their mode of origin, how they arose, and how they became crystallized. And yet, the history of law cannot compare, in intensity of interest, in power of fascination, with that of medicine. The history of medicine is, to a large extent, the history of civilization; the medical opinions in every age were colored by the culture of that age and bear its signature. Medicine is not something esoteric, something not under the influence of the shaping forces that control the progress of mankind in other directions; just like social and economic conditions, it is under the sway of that omnipotent force, evolution. The medicine of to-day could not be what it is, nor would the medicine of the future be what we are sure it will be, without the mental travail of our predecessors from the earliest time and our own work, which is only a link in the chain.

Take the circulation of the blood. We talk of it glibly as a self-evident truth, and are unmindful of the fact that we did not discover

it, but that it was made known to the world by the immortal Harvey, who toiled and labored in giving birth to this discovery, perhaps the grandest ever made by man. Is it not our duty to know something of the history of this discovery? Have not the laity a right to reproach us if we do not cherish the memory of Harvey, of Boerhaave, of Hunter, of Jenner, of Vesalius, of Morgagni, the heroes of medicine?

But apart from the charm, apart from the question of duty, the study of history has still another basis. It guards against error. The past of medicine, like the past of other sciences, has its dark as well as its bright side. Error has often been rampant, dying but slowly before the onslaught of truth. But it is curious that errors are apt to be revived and hailed as new truths, and sometimes perturb the mind, not of the laity alone, but even of the physician.

A knowledge of the history of the past guards us against a hasty espousal of a fallacy which those who preceded us had buried in the dust. Remedies are vaunted as new and efficient that were long ago discarded. On the other hand, an historic knowledge may make us accept something more readily than would be the case in the absence of such knowledge. Take bleeding, for example: For many years bleeding has been in disrepute, and physicians still shrink from employing it, because of the harm that was done with it in the last century and the early part of this one. But if it is known that it was not bleeding itself, but the indiscriminate and excessive use of it, that cost so many lives, then we shall not hesitate to resort to it whenever our more enlightened knowledge recognizes a clear indication.

But historic knowledge has another value of transcendent importance, far above the practical one just indicated; it endows its possessor with that rarest of all attributes, the critical faculty. No one who is ignorant of the truths and fallacies of the past, of the multitudinous changes through which medical opinion on any one subject has passed, can judge of the truth or permanency of the thought and theories of his day. Without the critical faculty, we can form no trustworthy independent judgment, but are swayed by every new argument, and believe always the last thing we read or hear. You will be astonished as you grow older to find how feebly some men in medicine hold their opinions, if they have any at all. This is not because of the harboring of a scientific spirit which is open to conviction, but is due to a lack of grasp, of judgment, dependent upon the absence of historic knowledge. We all marvel at the high state of medical science in Germany, and willingly yield to the Germans the palm of pre-eminence. One reason for this, I am convinced, is that the German is not content to know the thought of his time, but makes himself familiar with that of the past to a degree nowhere equalled.

When he writes an article, he searches the literature as far back as he can for data bearing on his subject, discriminates and judges between the false and the true, and, by induction and deduction, formulates his own mature views and clings to them and defends them with a zeal and a pertinacity, a pugnaciousness, I may add, that is refreshing and stimulating. From an article in the January *Forum*, by Professor Eucken, I quote the following:

"Prominent Americans have frequently told me that they regard as the most striking characteristic of contemporaneous German science the tendency to treat all subjects historically and critically; to state carefully the origin of every problem, and trace it through every phase of its development to the present day. Even experiments in physics, they say, are not performed without an historic introduction."

I want to urge you, in this connection, to make it a practice in your future work, whenever you write an important article, to look up all the relevant literature, without which your essay will not be complete. A knowledge of the literature may also guard you against committing mistakes. We, in this country, are less often neglectful in this respect than are our English cousins. J. Greig Smith, a noted English gynecologist, recently deceased, in 1893 spoke thus: "The man who writes on his own experience and knowledge, writes on a poor and narrow and shifty foundation. In science, he is to be found only in medicine; and in scientific medicine, he bears the prefix, in all its significations,—British."

As undergraduates, you have not much time for anything but your text-books; and yet, I hope to see the day when medical students in the higher classes will go to the libraries and read the current journals and books, as well as history and the medical classics. Few of us know that there are classics in medicine; yet our literature is rich in master works. Medicine has not one but many Blackstones. To read the works of Sydenham, Addison, Bright, Trousseau, Laennec, Traube, Niemeyer, Cohnheim, and others, is not time wasted.

If I were to outline a course of reading, I should recommend, first, the perusal of a short work on the history of medicine, as that of Roswell Park or Julius Pagel, that could be read during the junior or senior year. Whenever a name is mentioned by your lecturer or in your text-books, such as Graves, Basedow, Velpeau, Hunter, Sylvius, Winslow, Scarpa, Charcot, refer to the history and read the biography of the man, and, if possible, go to the library and see his works, and handle them. How delightful the study of medicine would then become! Secondly, in medical societies, such as the one to which you and I have the great honor to belong, it might be a wise custom to assign to members in succession the preparation of brief biographies

of distinguished men of medicine, and by careful choice in this direction the student could learn a great deal of history during his undergraduate life, and acquire a taste for the fascinating study. At times the plan might be varied, and, instead of a biography, it might be advisable to have a member epitomize the history of an important disease. Thus, the subject of exophthalmic goitre, of aneurism, etc., might be looked up from the historic point of view,—not a difficult matter, if the student knows how to consult a library. Another very instructive feature would be the reading of the first classical description of a disease; for instance, the reading of Addison's paper on the constitutional and local effects of disease of the suprarenal capsules, of Raynaud's, on symmetric gangrene, of extracts from Bright's papers on renal disease, etc.

I hope I have not wearied you with my appeals. I am sure that medicine, interesting and absorbing as it is, can be made much more so, can be rendered a source of unfailing satisfaction, if, in your daily work as students and as practitioners, wherever the fates may cause you to plant your standard, you will keep in touch with the glorious past of our noble and incomparable calling.

ALUMNI NOTES.

The Annual Commencement.

The one hundred and forty-third annual commencement of the University of Pennsylvania was held in the Academy of Music, on Thursday, June 15, 1899. All departments were represented, and there were 624 graduates. After the offering of the invocation, by the Rev. Joseph May, LL.D., and the singing of the University hymn, written by Dr. Thomas Wistar, of the Class of '63, the oration was delivered by Professor Hampton L. Carson, who, in part, spoke as follows:

"Gentlemen of the Graduating Classes of the University of Pennsylvania: I never face an audience like this without a sense of awe. I never see masses of human beings, rising tier upon tier, their gaze turned in one direction and burning with 6000 eyes into my heart, without being oppressed with the responsibility of directing the thoughts and sympathy which are voluntarily surrendered to the articulations of the voice, into some useful and profitable channel. I

feel the weight of responsibility upon this occasion in an unusual degree.

"The first point that I wish to emphasize is the entire insufficiency of the capital invested in our university work to enable these institutions to fully perform the enormous and responsible tasks imposed upon them.

"I have often heard it said by many well-meaning but ill-informed persons, when appealed to for aid, 'Oh! you do not need money; you are rich; you have got a plant of about $7,000,000.' The remark is far distant from the facts. It is misleading in the extreme, and it is apt to encourage an indifference in many who are not familiar with the true condition of affairs.

"In 1895 there were but four universities in the United States with endowments exceeding $5,000,000, while the Adams Express Company had an aggregate capital of over $60,000,000. The investments in telephones were $77,500,000. In street railways there was invested $1,300,139,711, and in railroads, $10,741,363,319.

"The State of Pennsylvania, with a population of nearly 1,000,000 in excess of the six New England States combined, and with six times their aggregate wealth, has as yet dedicated to the cost of higher education but one-fourth of the amount of invested capital employed in New England to that end. Men and women of Pennsylvania, will not this touch your State pride and rouse you to exertion? Shall we, who excel in finance, in manufactures, in mines, in medicine, in law, in all the sciences and arts, yield in our devotion to the higher and best interests of education?

"And yet, while thus heavily handicapped, the University of Pennsylvania stands in successful labor beside fair Harvard, and ahead of every other college in the land. When I see our Provost facing almost alone the tremendous responsibilities of his exalted station, and endeavoring, by indefatigable exertions, to arouse this community to some fair appreciation of the importance and magnitude of his task, toiling by night and by day to build up a mighty citadel of thought to fight against the kingdom of darkness and ignorance and obscurantism, I feel that I would be destitute of every vestige of gratitude if I failed to say that he deserves the zealous support of every citizen in the State. He has earned their admiration; now let them give him help.

"My Fellow Alumni: If we were soldiers on the field of battle and saw the captain of one heroic company struggling against fearful odds, we would call on the mountains to cover our shame if we failed to rush to the rescue. Oh, that my voice could reach the 15,000 sons of Penn and that I could touch a raw nerve of sympathy! Oh, that I could persuade the merchant, the manufacturer, the capitalist, and the banker

in this gracious year of abundant and widespread prosperity to believe that there can be no higher consecration of wealth, no act richer in beneficent results, than generous gifts to the cause of learning."

At the close of the address, following the singing of "Hail! Pennsylvania," the degrees were conferred, the honorary degrees being awarded last. "America" was sung, and the benediction brought the exercises to a close.

The chief marshal of the day was Joseph Cresson Fraley, Class of '68 (C.), and his assistants included Robert Adams, Jr., Class of '69 (C.); Joseph de Forest Junkin, Class of '74 (C.); William Barton Hopkins, Class of '74 (M.); Richard Wilson McCredy, Class of '74 (C.); Lawrence Taylor Paul, Class of '74 (C.); Horace Wells Sellers, Class of '77 (C.); John Morin Scott, Class of '78 (C.); George Jesper Harding, Class of '83 (L.); Albert Draper Whiting, Class of '92 (M.).

The degree of Doctor of Medicine was conferred upon 211 candidates. The following honorary degrees were conferred: Bachelor of Arts on William Bowen Boulton; Bachelor of Science on Alfred Craven Harrison, Jr., and Louis Childs Madeira, Jr.; Doctor of Science on Coleman Sellers and Edgar Fahs Smith; Doctor of Sacred Theology on Rev. Elwood Worcester and Rt. Rev. Lucien Lee Kinsolving; and Doctor of Laws on Hon. John Bayard McPherson.

Meeting of the General Alumni Society of the University.

The annual meeting of the General Alumni Society of the University was held in Houston Hall, at noon, on June 13, 1899. Following the business meeting a luncheon was served in the dining-hall. Provost Harrison presided as toastmaster. In the course of his remarks Mr. Harrison stated that several alumni organizations in different States had each started a movement to assist in the completion of the dormitory system. They would supply the funds necessary to erect several houses, and would have the privilege of naming them. Provost Harrison mentioned in particular the interest the Wisconsin Alumni Society is showing in the University.

The Class of '79 is another alumni organization which has recently made a gift to the University. It was a check for $5000 to fund a scholarship in memory of the late Professor E. Otis Kendall. Another gift announced was the offer of the Alumni Society to establish a fund of $100,000 for creating other scholarships in the various departments.

A memorial gate has been presented by the Class of '73, the first class to graduate after the institution removed to West Philadelphia. The gate has been erected at the western end of Hamilton Walk. Another memorial gate, it was announced, is to be erected at the north-

east entrance to the walk, at Thirty-sixth and Spruce Streets, by the Class of '72, the last class to graduate while the University was located at Ninth and Chestnut Streets. The necessary amount has been subscribed, and work is to begin shortly.

It was also announced that the Class of '94 had completed a fund for erecting the gate to the War Memorial Tower, to be erected at Thirty-seventh and Spruce Streets. A costly drinking fountain, to be placed in the transverse section of the dormitories, soon to be constructed, is to be erected by the Class of '93.

On behalf of the trustees Provost Harrison stated that the University had purchased the two and one-half acres of ground, now occupied by the Foulke and Long School for Girls, on Thirty-fourth Street, near Locust. On the eastern end, facing Thirty-third Street, and opposite Franklin Field, is to be erected the $300,000 gymnasium, and on the western end, facing Thirty-fourth Street, the $250,000 laboratory for the Medical Department.

On continuing his speech, he said: "We now have fifty-six acres of ground, on which are more numerous and larger buildings dedicated to the diffusing of knowledge and the advancement of learning than are possessed by any other single university in the world. This University has grown, and will continue so to do as long as the alumni give it their aid. One of the greatest needs of any great university is a permanent endowment fund, and such is now the pressing need of Pennsylvania. The fixed expenses of this institution, not including the cost of constructing buildings, are nearly $1,000,000 annually, which is more than double its assured income. The yearly deficit is about $60,000 on the average. To meet this a permanent endowment fund is necessary."

Provost Harrison spoke of the present position of the University, with its more than 2800 students, representing every State in the United States and seventy-three foreign countries; of the library, which has increased with greater rapidity the past year than others in the country; of the medical school, whose present graduating class had secured all hospital appointments by competitive examinations, and of the law school and its changes in requirements for admittances. In this department 50 per cent. of the first year men hold college degrees, and 14 per cent. of the last entering class come from more than 100 miles outside the city.

Reunion Class of '89 (Medical).

The decennial reunion of the Class of '89 of the Medical Department of the University was held at the University Club last evening. The committee having the matter in charge consisted of Drs. Wm.

Campbell Posey, chairman; S. Stryker Kneass, Alfred Stengel, J. Alison Scott, John T. Carpenter, Jr. Fifty members of the class were present. Dr. Alfred Stengel was toastmaster. The toasts were responded to as follows: "The University," Dr. Wm. Campbell Posey; "Our Specialists," Dr. Chas. N. Davis; "The Medical Faculty," Dr. Jos. McFarland; "The Class in Literature," Dr. J. Howe Adams; "The Army and the Navy," Dr. Edward R. Stitt; "The Rough Riders," Dr. Harry LaMotte. An elaborate history of the class, containing photographs of the University buildings and some of the older members of the Faculty, was presented to each participant.

Meeting of the Society of the Alumni of the Medical Department of the University.

The Society of the Alumni of the Medical Department of the University held its annual business meeting and banquet at the University Club, on Wednesday evening, June 14, 1899.

The following officers were elected: President, Dr. Meredith Clymer; Vice-Presidents, Drs. John H. Packard, James Tyson, S. D. Risley, and Charles K. Mills; Secretary and Treasurer, Dr. S. W. Wadsworth; Executive Committee, Drs. Horace Y. Evans, John Ashhurst, Jr., R. A. Cleeman, Samuel S. Stryker, De Forrest Willard, Roland G. Curtin, W. Barton Hopkins, Charles W. Dulles, John H. Musser, Thomas R. Neilson, Judson Daland, Harry H. Whitcomb, William J. Taylor, David B. Birney, B. Franklin Stahl, J. Allison Scott, Joseph Sailer, Charles H. Frazier, Joseph T. Buxton, Breese M. Dickinson, William F. Keim.

About 100 members of the society attended the annual banquet, among those present being Dr. Thomas Dunn English, of the Class of '39, and famous as the author of "Ben Bolt." Dr. English was among the speakers. Dr. Richard A. Cleeman presided, and the toasts were as follows: "The University," Provost Harrison; "The Trustees," Dr. J. M. Da Costa; "The Jefferson College," Dr. J. Chalmers Da Costa; "The Medico-Chirurgical College," Dr. W. L. Rodman; "The Medical Department," Dr. Horatio C. Wood; "The Dental Department," Dr. Edwin T. Darby; "The Clergy," the Rev. Floyd W. Tomkins.

The Memorial Gate Dedicated.

Ceremonies marking the presentation to the University of Pennsylvania of the Class of '73, memorial gate and entrance-way to Hamilton Walk, were held at Thirty-eighth and Pine Streets, at six o'clock last evening. The memorial was accepted by Provost Harrison, on

behalf of the University, in the presence of the members of the class, the trustees, and representatives of the classes of the college which have graduated since the year 1873. W. Wilkins Carr, chairman of the committee, presented the memorial, saying in part: "In here dedicating this memorial to our Alma Mater we cherish in remembrance her proud history; we revere her teachers, who strive to impart knowledge while stimulating its love and pursuit; we are mindful of her inheritances, which send from her halls men equipped for the first rank in science, art, and literature, for her teachings tend to fix a generous purpose in the growing mind, and tend to incline her sons to patriotic impulses, that our country, however bounded or described, is still our country, to be cherished in all our hearts, to be defended by all our hands."

Provost Harrison, in accepting the memorial on behalf of the trustees of the University, said in part:

"A recent poet, speaking of his own song, greeted his oldest brother in words such as these: 'The youngest to the oldest singer that England bore.' And now these youngest gates may well greet the oldest gates, or archway, known to exist upon this planet, for it has been our expedition in Babylonia that has discovered, between the Tigris and the Euphrates, the oldest known use of the arch in the history of the world, a use which has thrown back the knowledge of the keystone for more than a thousand years.

"Let me, then, accept, with the sincerest thanks of the University, this exquisite gate-way, and close with the earnest wish that 'Nothing may ever enter here which defileth or maketh a lie.'"

Recent Appointments.

Dr. James Tyson has been elected by the Board of Trustees of the University of Pennsylvania to the chair of Practise of Medicine, made vacant by the death of Dr. William Pepper.

Dr. John H. Musser and Dr. Alfred Stengel were elected Professors of Clinical Medicine to succeed Dr. Tyson.

Necrology.

Dr. William T. Scott died in Philadelphia, June 18, 1899. Dr. Scott was born in Bloomsburg, Columbia County, Pa., in 1867. He was graduated from the Philadelphia College of Pharmacy in 1886, and from the University of Pennsylvania in 1892.

EDITORIAL.

AN OPERATION FOR ESTABLISHING BY ANASTOMOSIS A COLLATERAL VENOUS CIRCULATION IN HEPATIC CIRRHOSIS.

In the *British Medical Journal* for September 19, 1896, Drummond and Morison reported a case of ascites due to cirrhosis of the liver, which was cured by operation. Surgical interference was suggested to Drummond by a series of post-mortem studies on cases of cirrhosis of the liver, which demonstrated that often where ascites was absent there were vascular adhesions connecting the parietes to the liver. In one case the cirrhosis had existed for twenty years, and yet death resulted from some other cause. In many of these cases free communication seemed to explain the absence of ascites. As a result of the suggestion, two cases of ascites were operated on. In the first case the clinical diagnosis was not verified at the operation or by a post-mortem examination, and doubts remain as to whether the ascites was really due to cirrhosis of the liver. The operation in this instance failed to cure. In the second case there was not the slightest doubt of the diagnosis, for the liver was the typical hobnailed liver. In this case the operation proved a brilliant success, and the dying patient was restored to apparently perfect health. The abdomen was opened below the umbilicus and the ascitic fluid withdrawn. The abdomen was dried with sponges, and the peritoneum, especially in the neighborhood of the liver and spleen, was scrubbed with sponges. The omentum was sutured across the anterior abdominal wall. A glass tube was left in Douglas's cul-de-sac and the wound was closed by silk sutures. To keep the parts in apposition straps were applied circularly over the abdomen. The patient made an uninterrupted recovery.

In the *Berliner klinische Wochenschrift* for September 19, 1898, Talma reported another successful case. In this instance tapping had been performed five times, but had been rapidly followed by reaccumulation of the fluid. On opening the abdomen the surface of the liver was found to be granular, and the serosa white and thickened. The gall-bladder and great omentum were sewed to the abdominal wall, and the wound was closed. The wound healed, and the fluid did not reaccumulate in any amount. The spleen remained enlarged, however, and as this was believed to be due to venous stasis, the abdomen was again opened about three months after the first operation, and the

spleen was sewed to the abdominal wall. The patient left the hospital relieved of all symptoms about a month after the second operation and was in perfect health two years later.

Weir (*Medical Record*, February 4, 1899) reported an unsuccessful case. In this instance the peritoneal surfaces were scratched with the sharp point of a hat-pin, and after the oozing had ceased the omentum was stitched to the edges of the abdominal wound and the wound closed. Siphon drainage was secured by passing a double perforated tube into the pouch between the stomach and the bladder and attaching a Cathcart apparatus. Compression of the abdomen was produced by overlapping straps of adhesive plaster. The patient did well for a time, but died from peritonitis. Scolices of echinococci were found encysted in the liver, the presence of which may have predisposed to peritonitis.

In the *Lancet* for May 27, 1899, Morison reported another successful case. At the operation about two gallons of fluid escaped from the wound. The liver was diminished in size, and presented a typical hobnailed surface. The spleen was enlarged to at least six times its normal size. Two years later his health was so good that he was passed by the medical adviser of a first-class life insurance company. This was all the more remarkable since, on several occasions previous to the operation, he had been rescued from an apparently hopeless coma by the administration of brisk purgatives.

In all eight patients have been operated on: of these three recovered, two recovered from the operation but were not benefited, and three died. Of these latter, one died from shock and two from peritonitis. In one of the fatal cases, however, hydatid disease of the liver was also present. While this showing is not altogether brilliant, it would seem to justify operative interference in certain instances, especially where rapid reaccumulation follows paracentesis, and where the cirrhosis is unassociated with such complications as valvular disease of the heart, albuminuria, and glycosuria. The conclusions which Morison has come to are as follows: (1) Ascites due to liver cirrhosis can be cured by the establishment of an efficient anastomotic circulation. (2) Adhesive peritonitis produces adhesions between the abdominal contents and the parietes in which new blood-vessels form. If there is any demand for the new blood-vessels they remain permanently. (3) The operation described in the original paper by Drummond and Morison is the safest and most certain method of producing adhesions. (4) It is no longer advisable to treat the ascites due to cirrhosis by repeated tappings, if the patient is otherwise sound and in fair general condition. After one or two tappings have failed operation offers the best chance of prolonged and useful life.

MEDICAL PROGRESS.

MEDICINE.

UNDER THE CHARGE OF

JAMES TYSON, M.D.,

ASSISTED BY

M. HOWARD FUSSELL, M.D., AND A. O. J. KELLY, M.D.

Aortic Aneurism as a Cause of Hypertrophy of the Left Ventricle.

Calvert (*Royal Medical and Chirurgical Transactions,* January 10, 1899) states that the post-mortem records of St. Bartholomew's Hospital include 124 cases of aneurism of the arch of the aorta. In sixty-eight of these there was no hypertrophy of the left ventricle; in forty-seven of them other causes of hypertrophy were unquestionably present; while in the remaining nine a similar explanation of the hypertrophy was probable.

In the discussion of Calvert's paper, Lazarus-Barlow (*Medical Record,* February 11, 1899) stated that the records of St. George's Hospital were equally significant.

The Diagnosis of Tubercle Bacilli in Pleuritic Fluid.

Besançon and Griffon (*Lancet,* April 1, 1899) have just made known a discovery which promises to be of the greatest use in the diagnosis of the tubercle bacillus in cases where direct microscopical examination is of no avail, as, for instance, in the effusions of pleurisy. Until now the accepted method has been to inject some of the suspected fluids into the peritoneal cavity of a guinea-pig, but this procedure often failed to give any definite result even when the fluid came from a patient undoubtedly the subject of tubercle. Possibly the serum itself possessed immunizing qualities, or else the microbes were in so very dilute a solution that there were too few in the small quantity of fluid injected to affect the animal. The cultivation method would have given good results if the operator could have been certain of always using a cultivation medium of a constant nature. Such a medium, however, was not known until Besançon and Griffon took to using agar-agar (*gélose*) mixed with blood. Pus from a chronic abscess connected with the ribs, cultivated after this method, gave at the end of ten days bacilli visible under the microscope. Pleuritic fluid from two patients, cultivated in the same way, gave colonies visible to the naked eye at the end of twenty-eight days. Bacilli from these under the microscope are absolutely characteristic. As a control experiment two guinea-pigs were inoculated at the same time with the same fluid, and one of these animals, which was killed at the end of twenty-eight days, showed no visible lesion due to experimental tuberculosis. In this case, then, the presence of the tubercle bacilli could not have been demonstrated

without the culture method, and it is evident that this mode of research will be very useful. By it observers will be able to diagnose the presence or absence of the tubercle bacilli in various effusions, such as those into the joints, the tunica vaginalis, the peritoneum, or the meninges.

Pyrexia and Hyperthermia.

Meissen (*Berliner klinische Wochenschrift*, Nos. 23 and 24, 1898) reports a case of remarkably high temperature. A woman, aged 23, entered the institution at Hohenhonnef on account of what was presumably early phthisis. There was a most annoying irritable cough. Tubercle bacilli were not found, though there was impaired resonance at the left apex. On account of slight rises of temperature rest in bed was ordered. After this the temperatures recorded were abnormally low. The patient, however, had been taking her own temperature, but when this was done by, and under the constant observation of her medical attendants, the thermometers, which were reliable instruments, frequently rose to over 110.6° F., whether they were placed in the axilla, mouth, or rectum. The general condition was but slightly disturbed, though sometimes there was anorexia, headache, or slight delirium. The type of the fever was intermittent. Nothing but the dulness at the left apex could be found, and there were no malarial parasites in the blood. After going to her own home, the family attendant found on one occasion a temperature of 114° F., which was accompanied by unconsciousness and delirium. After quinine had been taken for a time the fever suddenly ceased, the cough gradually disappeared, after being present for a year, the general condition improved, and the physical signs in the lungs were perfectly normal.

The patient, though rather excitable, was not of a typical hysterical type. Still, Meissen believes the cough and the high temperatures were hysterical, the latter from a disturbance of the central thermotaxic mechanism. He proposes to call such rises of temperature, not depending on the introduction of toxic material, and not accompanied by the usual symptoms of fever, hyperthermia, as opposed to true pyrexia.

What is Tabes Mesenterica in Infants?

Walter Carr (in the *Lancet* of December 17, 1898, p. 1662) very trenchantly exposes a prevalent error. He says: "I fully agree, therefore, with the statement in Ashby and Wright's 'Diseases of Children,' that 'mesenteric disease is much more frequently diagnosed than discovered post-mortem,' but if so, what is the real nature of the thousands of fatal cases of so-called tabes mesenterica in young children? Simply, I believe, marasmus, the result of chronic gastro-intestinal catarrh. An infant is brought up by hand; its food disagrees; it gets gastro-intestinal catarrh, which leads to distention of the abdomen, griping pain, chronic and very intractable diarrhea, and occasionally vomiting. Of course, the child wastes steadily; it has, perhaps, irregular pyrexia (though I suspect that the temperature is not, as a rule, very systematically taken in these cases). The mother suggests that the child has 'consumptive bowels,' the medical practitioner agrees; it is the simplest way out of the difficulty, and saves the necessity of taking much further trouble in treatment, and, after death, he writes 'tabes mesenterica' on the certificate. It is an attractively impressive term, and no doubt conveys much consolation

to the afflicted parents. These cases are to be seen, of course, by the hundred in any children's hospital, but they are not tuberculous,—the necropsy proves that. I have notes of early post-mortem examinations on such cases, all children under 2 years of age. In only one was there any tuberculous lesion present, and that was merely early caseation in the mesenteric glands, and one nodule in the intestine, yet in very many 'tabes mesenterica' might have been diagnosed with much confidence, but for the wholesome corrective of pathological experience."

Meningo-Typhoid Fever.

Loeb (*Deutsches Archiv für klinische Medicin,* Vol. lxii, Parts iii and iv, 1899) reports the case of a patient severely ill, with transitory disturbances of consciousness, long-continued high fever, and right-sided papillitis, from which a diagnosis of meningitis was made. During the course of the illness, the Widal reaction that had been negatived became positive. It was supposed that the primary affection was a meningitis, due to the typhoid bacillus, and that later the infection of the general system, particularly of the intestine, occurred. Loeb, in consequence, adopts the hypothesis of Sanarelli, that typhoid fever is to be looked upon as an infection of the entire lymphatic system.

Cardiac Arrhythmia and the Röntgen Rays.

Hoffman (*Deutsche medicinische Wochenschrift,* April 13, 1899) directs attention to the value of the X-rays in observing the cardiac movements, as with the use of the rays the different varieties of cardiac contraction may readily be made out, the observation of irregular cardiac action is especially interesting. The pulsus bigeminus and the pulsus alternans are the most frequent manifestations of cardiac irregularity. But these are often difficult to recognize as they do not reach the radial artery. At times the cardiac impulse can be neither seen nor felt, and auscultation may not reveal the diminished alternate contractions. A case is cited,—a man, aged 26 years. The apex-beat could not be seen or felt. The pulse, originally 78, at the end of fourteen days was 40. Even with the phonendoscope the beat, which could not be felt, was represented only by a very feeble sound. By means of the X-rays this very feeble contraction was readily recognized,—the movements of the left border of the heart being very perceptible. Sphygmographic tracings of the pulse gave no indications of the dropped pulse. The case might have been viewed as one of bradycardia. A few days later the pulse was again 80 per minute.

Lead-Poisoning and its Treatment.

Destrie (*Journal médical de Bruxelles,* No. 4, 1899) describes the various ways in which lead may gain access to and affect the body, and cites several cases in which it was very difficult to ascertain the origin of the poisoning. This was especially the case in beer-drinkers, who often became affected from the lead of the pipes by which the beer is conveyed from the beer cellars. An important diagnostic point is the occurrence of marked sensitiveness to pressure over the lower end of the sternum and in the epigastric region. This was considered of nervous origin. In the treatment of acute lead-poisoning it is important to rid the intestines, the mucous membranes, and the muscles of the

irritant lead salts. This is best attained in the first place by the use of active cathartics. If these be unavailing, the painful peristalsis of the intestine may be controlled by the use of belladonna. In chronic lead-poisoning, when there are no active manifestations of acute poisoning, potassium iodide is indicated. The employment of this, however, should be intermitted every five or six days for three or four days, as the elimination of the lead occurs rapidly in the first day after the administration of the potassium iodide, but rapidly diminishes. Massage, electricity, etc., are also of utility.

The Differential Diagnosis of Typhoid Fever from Acute Tuberculosis.

Carlo Bareggi (*Gazzetta degli Ospitala,* March 12, 1899; *British Medical Journal,* April 29, 1899) finds that, at the hospital in Milan during the last thirty years, typhoid fever had been mistaken for acute tuberculosis fifty-two times, and tuberculosis for typhoid ninety times. Widal's test is not always accurate, and is troublesome. The author advocates a simpler method, which consists in observing the behavior of twenty or thirty drops of blood drawn from the fingers of the patient into a small test-tube, and allowed to remain at rest for twenty-four hours. When the resulting coagulum is observed, it is found that in typhoid hardly any serum is formed, the clot is not retracted. In tuberculosis there is marked retraction of the clot from the sides of the tube, and abundant formation of serum.

Infantile Scorbutus.

Netter (*Bulletin et Mémoire de la Société médicale des Hôpitaux de Paris,* No. 32, 1898) reports a case of a well-developed child, aged 10 months, with scarce an indication of rhachitis, living in the best hygienic conditions, who suddenly became ill with pains, pseudoparalysis, marked swelling of the legs, and anemia of the skin. Subsequently there developed two tibial subperiosteal hemorrhages, and a bluish discoloration of the mucous membrane of the palate. Under antiscorbutic treatment there was rapid recovery. No cause for the scorbutus could be detected with the exception of milk that had been subject to prolonged sterilization.

Hyperidrosis Spinalis Superior.

Kaposi (*Wiener klinische Wochenschrift,* No. 10, 1899) presented, at a recent meeting of the Vienna Medical Society, a boy, aged 15 years, with marked peculiarities in the secretion of sweat. His family and previous personal history were negative. There was some kyphoscoliosis of the cervico-dorsal vertebræ, and some indications of hydrocephalus. His nose and ears were cyanotic and cool; his internal organs in good condition. When 1 year of age his mother noticed an abnormal sweating of the nose. From this time until he was 8 years of age his upper lip, forehead, inner part of the eyebrows, chin, neck, trunk as far down as the sixth rib, and the arms as far as the wrists, successively, became affected with this unnatural sweating. During the past seven years the hyperidrosis remained confined to these regions. The affected parts of the body were almost continuously bathed in sweat during cold weather, but this was diminished when the patient was warm from exercise or in warm weather. A cold bath induced the sweating, but a hot bath did not. When covered in bed,

the sweating affected only the nose and eyebrows. When pilocarpine was given, the sweating began on the regions the seat of hyperidrosis; atropine caused cessation of the sweating. If one arm was rendered anemic by pressure, the sweating did not affect the anemic area even after an injection of pilocarpine. The case was considered to be one of hydromyelia, with abnormal irritability of the vasomotor centres of the upper dorsal and lower cervical regions. It was also suggested that implication of higher regions of the nervous system might account for the hyperidrosis.

Syringomyelia with Marked Laryngeal Distress.

Druault (*Annales des Maladies de l'Oreille, du Larynx*, etc., May, 1898; *Deutsche medicinische Wochenschrift,* March 9, 1899) reports the case of a girl, aged 22 years, who has suffered for six months with dyspnea, which became excessive upon the slightest exertion. Laryngoscopic examination revealed that the glottis closed well during phonation, but that during inspiration it opened but slightly, so that there was a space but two millimetres in width. There was, therefore, a posticus paralysis. In addition, there was a paralysis of the fauces, with characteristic rhinolalia and regurgitation of the food through the nares. Later there developed, throughout almost the entire trunk and extremities, extensive disturbances of sensibility,—diminution of the pain and temperature sense, with preservation of the tactile sense. The knee-jerks were increased. The symptom-complex was considered to indicate a bulbar lesion. Disseminated sclerosis was excluded on account of the absence of intention-tremors, nystagmus, and scanning speech; amyotrophic lateral sclerosis, on account of the presence of the disturbances of sensibility; hypertrophies, cervical pachymeningitis, on account of the absence of marked pains. The case was, therefore, considered to be one of syringomyelia.

Albuminuria in Diabetes.

Maragliana (*Gazzetta degli Ospitala,* March 5, 1899; *British Medical Journal,* April 8, 1899), in a clinical lecture on a case of diabetes, discusses the phenomenon of albuminuria in relation to diabetes. Its frequency has been estimated at 40 per cent. of the cases by Stokvis; various other estimates have been made; the variations are accounted for by the inclusion or exclusion of cases where a minute trace of albumin has been observed. The significance of albuminuria depends largely on its cause; it may be merely functional, due to stasis, or to special alterations in the kidney of a diabetic character, or to ordinary nephritic inflammations; obviously the prognosis differs as the nature of the cause varies. The statement that when albumin appears then sugar disappears, if there is any truth in it, is to be explained by the fact that as the polyuria and glycosuria decrease under treatment, so albuminuria appears owing to the much slighter degree of dilution, a large quantity of water sufficing to mask the presence of a small quantity of albumin, which becomes apparent when the urine is less diluted.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

ASSISTED BY

CHARLES H. FRAZIER, M.D., AND GEORGE M. PURVES, M.D.

Technique for Intracerebral Injections.

Albert Kocher (*Centralblatt für Chirurgie,* No. 22, 1899) recommends the following method of administering intracerebral injections. After shaving and cleansing the anterior half of the scalp, the point at which the injection is to be given is determined with the aid of a craniometer. The fluid is to be injected into the lateral ventricles, and in so doing the motor centres should be avoided. It has been found that a point two and a half to three centimetres from the bregma meets all indications. After cocainizing the scalp in this region a bone-drill is applied at the selected point, and a hole drilled through the scalp and cranium; upon withdrawal of the instrument the hypodermic syringe is inserted and the medicated fluid injected into the lateral ventricles. The method is so simple that it can be employed without any difficulty in practice outside the hospitals. The author cites a case of tetanus, in a 12-year-old boy, with whom he carried out the simple operation with great satisfaction, two intracerebral injections of tetanus antitoxin having been administered.

Resection of the Gasserian Ganglion in a Case of Rebellious Facial Neuralgia.

Sabino Coelho (*Revue de Chirurgie,* May 10, 1899). The patient upon whom the operation was performed had been a victim of tic douloureux since April, 1892, and had had two peripheral operations, section of the infraorbital nerve in September, 1894, and a resection of the inferior maxillary nerve, in the pterygo-maxillary fossa, in August, 1895. In both instances the patient enjoyed relief for about three months. In February, 1898, the radical operation —that of resection of the Gasserian ganglion—was undertaken, the author preferring the Hartley-Krause method. As has been the experience of other operators, the hemorrhage was so free and uncontrollable in the early stages of the procedure that the wound was tamponed, and further interference postponed for five days. After the dura mater had been separated from the base of the skull, by an instrument especially constructed for the purpose, the infra- and supra-maxillary nerves were divided, and, finally, the ganglion itself freed from its attachments. Convalescence was uninterrupted, the patient had no fever or other complication, and was up on the tenth day.

The histological examination of the specimen revealed various pathological lesions. Some of the cells were perfectly normal, but the majority had undergone very pronounced changes, even to the total destruction of the normal cell tissue and its substitution with connective tissue. In certain cells the chromatic substance was reduced in quantity and transformed into small granules, pre-

senting a picture in marked contrast to that of the normal cell. The nuclei also manifested certain distinct departures from the normal. In some cells it was possible to demonstrate an infiltration with certain black pigment granules. The neuron was entirely destroyed, and in its place were found certain round cells, which filled the capsule surrounding the degenerated cell structure.

The cornea remained entirely free from any lesion until the sixth day, when a superficial ulceration developed; under appropriate treatment, however, the ocular lesion cleared up within a month, with the exception of a small patch. The usual precautions had been taken to prevent corneal ulceration, but without avail. The author is inclined to believe that while the interference with the trophic supply plays some part in the production of this complication, the fundamental cause lies in the insensibility of the cornea, resulting in insult to the latter from the unavoidable pressure of the compress.

An Unusual Case of Scoliosis Neuromuscularis Ischiatica.

Chr. Fopp (*Zeitschrift für orthopädische Chirurgie,* Heft 6). The present case is an unusual one, in that the patient at different times assumed three different attitudes, one symmetrical and two asymmetrical. In all three the primary manifestation was a change in the relation of the antero-posterior curves,—*i.e.,* in place of the normal lumbar lordosis there was a kyphosis, and in place of the dorsal kyphosis a lordosis. In the symmetrical form the changes in the antero-posterior curves were more pronounced than in the asymmetrical variety, and these changes in the normal antero-posterior curves preceded the development of the lateral curvatures. Of the asymmetrical varieties, one was the so-called heterologous scoliosis, with the convexity towards the right in the lumbar region, and towards the left in the dorsal, while the other was the homologous scoliosis, with the convexity towards the left in the lumbar region, and towards the right in the dorsal. Of the manifold theories that have been advanced in explanation of this complication of sciatica, it may be safely asserted that no one of them will account for the very varied manifestations of this deformity. Fopp has attempted, after reviewing them all, to apply one or more to the varied manifestations of the case under his observation, but without success. He only goes so far as to say that in the production of this deformity three factors seem to enter,—the voluntary and the involuntary contraction of those muscles that control the relation between the pelvis and the vertebræ, and, thirdly, the weight of the trunk. He is further convinced that the lumbar as well as the sciatic plexus is affected in this condition. The voluntary muscular contraction and the body weight play, of course, a more important part when the patient is in the sitting or standing posture. It was a peculiar feature of this case that the patient suffered the greatest amount of pain when he was lying quietly in bed, and that during this time the muscular spasm was most pronounced. Whether these spasms were reflex or not could not be determined.

Report on the Surgical Anatomy of the Gall-Bladder and Ducts from an Analysis of One Hundred Dissections.

Geo. Emerson Bruner (*Annals of Surgery,* June 1, 1899). Of the 100 subjects examined, in no case was there any considerable variation from the normal position of the gall-bladder, except that which could be accounted for by its method of peritoneal attachment, or a change in the size of the liver. In

the majority of cases the gall-bladder received but a partial peritoneal investment, from one-fourth to one-third of its surface being directly in contact with the liver tissue. In five subjects, however, it was attached to the liver only by means of a double fold of peritoneum, forming a distinct mesentery and allowing considerable movement. In three of these there was also an extension outward of the free border of the lesser omentum to the fundus, and in one instance to a point one inch beyond the fundus, thus forming a double mesentery, the upper being attached to the under surface of the liver, the lower to the duodenum and the transverse colon, and in the one instance referred to, to the hepatic flexure of the colon.

These variations in the peritoneal arrangement allowed a considerable amount of mobility of the viscus, which, if rendered palpable by the presence of calculi or malignant diseases, might be felt at any point within the radius of its mesentery.

In only one instance of the five did the abnormal peritoneal arrangement present any feature of surgical importance, and that was the case in which the hepatic flexure of the colon presented a gradual curve and not an acute flexion, and occupied a position extending from the posterior abdominal wall, near the outer border of the right kidney, to the junction of the first and second portions of the duodenum, and from this point downward, entirely concealing the descending portion of the duodenum, and firmly bound to it.

In this instance the gall-bladder lay between the two folds of the gastro-hepatic omentum, the free border of which extended well to the right from the anterior margin of the right lobe of the liver to the hepatic flexure of the colon. In the above five instances the irregularities were probably congenital, as no evidence of previous inflammation could be detected.

Nine cases, however, were observed where, as a result of a severe inflammatory process, marked changes in the relations of the neighboring viscera had taken place. In seven of these the gall-bladder was found adherent to the first and second portions of the duodenum, the transverse colon and omentum rendering access to the ducts and duodenum for purposes of exploration or operation difficult, and only possible after considerable dissection.

Regarding the size of the gall-bladder there was considerable variations: the smallest measuring one and a half inches in length, while the largest measured six inches.

Twelve of the 100 gall-bladders contained calculi.

While the position of the cystic and common ducts was found to be fairly constant, considerable variation was found in their length. The length of the cystic duct varied from one-half inch to two and a half inches, while that of the common duct varied from one and a half to four and three-fourths inches.

The writer believes that a degree of patency of the cystic duct sufficient to allow the easy passage of a probe is in all probability a pathological condition.

The second portion of the duodenum was opened and examined in seventy-seven subjects.

The duodenal orifice of the bile-duct was found in the great majority to be difficult to recognize.

It was found that the papilla could be most readily recognized by the sense of touch when the forefinger was introduced into the intestinal wound, and the inner and posterior portions of the duodenal wall were explored.

If an incision is made into the bowel just below the junction of the first and second portions of the duodenum, and the edges of the wound separated with the

fingers, a marked prominence was noted of the inner and posterior portions of the mucous membrane at the point of juncture of the ascending and descending portions of the gut; this prominence is crescentic in shape, and has been named by the author the "falciform fold."

The position of the papillæ was, as a rule, located at a point from one and a quarter to one and a half inches from the centre of this fold.

The author has also made a number of dissections of the lower intercostal nerves, and comes to the conclusion that an incision made through the outer border of rectus muscle, extending from a point one-half inch below the free border of the costal cartilage of the eighth rib to a point two inches above the umbilicus, or a curve incision parallel to the free border of the costal cartilages, extending from a point just below and outside of the ensiform cartilage, and then carried downward and outward to a point just above the emergence of the tenth nerve, are the best, as then only one nerve-trunk will have been divided, —the ninth,—or if this incision is not large enough, then, with a knowledge of the course of the tenth, it can be retracted and the incision somewhat extended without its division.

The Preventive and Curative Treatment of Enlarged Glands in the Neck in Childhood.

A. H. Tubby (*Clinical Journal,* May 17, 1899) remarks that chronically enlarged glands of the neck which resist treatment should be divided into two classes: the pretubercular and the tubercular,—that is, the simple chronic form is a pretubercular condition, which, if untreated, passes into the tubercular form. The best test as to whether an inflamed glandular mass is tubercular or no is its reaction to treatment.

The swelling of the glands is often due to an absorption through the mucous membrane in the way of septic matter; more often it is due to local causes, as enlarged tonsils, adenoids, chronic adenitis, carious teeth, chronic otitis media, impetigo, and parasites on the scalp.

It is now possible to emphasize the following points:

(1) The local *causes* of chronic glandular enlargement in the neck may be (*a*) non-tubercular or (*b*) tubercular. In many cases the non-tubercular is identical with the pretubercular condition.

(2) The chronic lymphadenitis is again either (*a*) simple and non-tubercular or (*b*) tubercular.

The preventive treatment may be summed up as follows:

(*a*) Remove all local causes; (*b*) employ the usual measures for improvement of the general health.

In regard to palliative treatment such applications of liniment, etc., as linimentum iodi, are useless, and as they irritate the skin they are to be condemned. The only application he considers of value is that of the oleate of mercury, and this is only efficacious when the local exciting cause has been removed.

Too frequently it happens that the lymphadenitis persists in spite of the removal of the cause. In such cases removal of the glands is imperative even though it is not certain that they are tubercular.

If, in the course of dissecting out a caseating gland, it should break or burst, suppurative and tubercular infection of the wound is likely to result. In such a case the wound should be thoroughly irrigated and an emulsion of carbolic acid applied freely, with a more thorough irrigation of the wound before closure,

In children, complete immobilization of the parts after operation is essential. If the patient is very restless, a poroplastic dressing is a valuable adjunct to bring success.

The importance of recognizing the facts that a simple local cause may have far-reaching consequences, and that once enlarged glands have occurred, their removal is imperative, cannot be over-estimated.

Malignant Tumors of the Kidney.

J. Bland Sutton (*Clinical Journal*, May 24, 1899), in this paper, considers the origin, cause, operative interference of sarcoma and carcinoma involving the structure of the kidney.

An analysis of a very large number of records of cases of malignant tumors of the kidney shows that they have a peculiar age distribution; for instance, during the first five years of life they are frequent; then follows a period of comparative immunity, then there is a second period of liability from 30 to 50 years of age.

It also is observed that the tumors of the infant and adult periods differ not only in structure, but they also arise from different regions of the kidney, as the renal sarcomata of infant life are lodged in the pelvis of the kidney, while those of adult life originate mainly in the connection with its capsule.

The malignant tumors which have a more intimate connection with the renal tissue are the carcinomata which spring from the epithelium of the uriniferous tubules.

Concerning the sarcoma of infancy occurring with the first five years of life, it is to be remarked that they originate in the connective tissue of the renal sinus, and that they gradually distend the cortex until the tumor is surrounded by a thin capsule formed of expanding secretory tissue of the kidney; this being in a sense a false encapsulation formed by the renal tissue and the true capsule of the kidney.

The base of these sarcomata is connective tissue containing cells, some of which are round and others of which are spindle-shaped; in some cases the ground substance contains groups of tubercles with regularly arranged cubical epithelium. In quite a number of cases the spindle cells have the cross striation of the fibres of voluntary muscle cells, and in these cases in which the striated cells are very abundant the tubules are absent.

The author believes the presence of the tubules to be explained by the entanglement of the uriniferous tubules in consequence of the sarcoma invading the cortex while the striated spindle cells are derived from the muscle tissue of the renal pelvis.

From this reasoning the doctrine of tissue prototypes is exemplified and satisfied by normal tissues without the aid of the theory of misplaced segments of adjacent mesoblastic somites.

Obstruction of the ureter from these sarcomata is very unusual, and generally there is a slight secretion of urine; this explaining the rarity of hematuria in these cases.

Although the ureter generally escapes, yet there is always an implication of the veins, this constituting one of the most dangerous features of renal sarcomata.

The tumor tissue extends into the renal vein and at times runs a considerable distance into the inferior vena cava.

The author remarks that it is a singular and well-established fact that where certain paired viscera, such as the kidneys, ovaries, eyeballs, and crura cerebri, are attacked in early life by sarcomata, in a very large proportion of cases the disease is bilateral.

A consideration of the results of treatment by nephrectomy gave, in a list of twenty-one cases, twelve patients who died as a result of the operation, and of those who recovered all died of recurrence within a year. Analysis of a large number of cases shows that nephrectomy for renal sarcoma in infants under 6 years has a mortality of over 50 per cent.

The sarcomata of adults differ in many important particulars from those of infancy, as a sarcoma of the adult arises in the cortex, usually in connection with the capsule, and then gradually invades the true tissue of the kidney.

This relation of the tumor to the capsule is an important one, because similar tumors are in the connective tissue in which the kidney is embedded, and this is, perhaps, a more frequent position for them than those which we term renal sarcomata.

The question has assumed a new aspect since Grawitz showed that many renal sarcomata occurring in adults exhibited, on microscopic section, the structure of the zona fasciculata of the adrenal. It is also worthy of note that while "adrenal nests" are found in so many situations, yet tumors exhibiting this peculiar structure should only arise in two situations,—namely, in the main adrenal and beneath the capsule of the kidney.

Whatever view may be taken of the tissue in which these tumors arise, it is quite certain that they possess peculiarities of structure which distinguish them from the ordinary round- and spindle-celled sarcoma. That they are malignant is beyond question, and though they are very vascular and often have extravasations of blood in their centres, yet they do not give rise to hematuria, because the tumor does not involve the renal pelvis. This is a most striking fact in their clinical history.

Carcinoma of the kidney is uncommon before middle life, and increases in frequency after 50. The disease consists in a gradual transformation of the renal tissue without any great distortion in its shape. The carcinomatous tissue creeps into the pelvis of the kidney extending along the ureter and even entering the bladder, this relation explaining the frequency of hematuria in the course of carcinoma.

Patients who are the subjects of malignancy, especially when advanced in life, bear surgical procedures very badly, especially is this true with the kidney.

The author comes to the conclusion that operation shortens rather than prolongs life, even in those cases recovering from the operation. At present we have no facts to indicate in dealing with malignant tumors of the kidney which should be interfered with and which should be allowed to run their course.

Treatment of Gastric Ulcer.

Ewald (*British Medical Journal*, October 29, 1898), in the discussion on treatment of diseases of the stomach, held at the last meeting of the British Medical Association, made the following remarks on the treatment of gastric ulcer. One of the most satisfactory affections to treat is ulcer of the stomach, provided, of course, that it is not too old. Recently the so-called rest cure has become identified with the name of von Leube. Since we have found that the nutrition of the organism, even though only for a limited time, may be carried

out by nutritive enemata, we have been able to go a step further with this treatment. The patient is confined absolutely to bed, and for the first five or six days receives as nourishment only nutritive enemata, which are given in the usual way, three or four times a day. The thirst is combated by small ice-pellets, the feeling of hunger by a few drops of a cocaine solution. It is remarkable, however, how slight these sensations are as a rule. If the pains continue at the beginning, a small morphine injection in the stomach region gives the best results. As a rule, this is not necessary, as the pains cease spontaneously as soon as the mechanical irritation of the ulcer stops. This pain constitutes an excellent differential diagnostic symptom for nervous cardialgia and biliary colic, which often are deceitfully like ulcer of the stomach in their symptoms. Nervous gastric pains will, by the withdrawal of food, be not at all, or only for the moment, influenced,—that is, so long as the suggestive effect of the novelty of the treatment continues. After no food has been given by the stomach for three to five days, according to the subjective symptoms of the patient and the general condition, then a few test-spoonfuls of some easily absorbable material are given. The simplest is a thin milk gruel of some meal or other, wheat or oats, or mandamin, or one of the many artificial preparations, Kemmerich's peptone, or somatose, or ukasin; if this causes no pain, the next day more is given. After three or four days other easily digestible substances are added, but at first in a more or less liquid form. Then the consistency of the food-stuffs is increased, and the nutritive enemata become fewer in number. After the first trial, however, should pain occur, then exclusive feeding by the rectum must be resumed, and in some cases kept up for ten to fourteen days. A considerable loss of weight ensues, but this loss is, however, of little importance, and is soon made up for, and the original body-weight far outstripped when the patient is able to eat plentifully without pain.

This method of treatment should be carried out wherever it is possible. It gives such excellent and sure results that one can say that where it fails there must be complications present,—old cicatrices, especially at the pylorus, perigastric adhesions,—or else that some other affection, whose seat is perhaps not in the stomach at all, must be the cause of the pains.

Congenital Dislocation of the Hip-Joint.

J. Kurtz (*Southern California Medical Practitioner*, June, 1898) has made a careful study of this rare condition. He remarks that it is now very generally admitted that the cause is an arrested development of the various portions of the joint. At birth it is found that the acetabulum is narrow and shallow, and the head of the femur disproportionately large; the muscles surrounding the joint are short and but poorly developed. There is no growth in the acetabulum, and as the child tries to walk the weight of the body causes the head of the femur to leave its original position and move upward and backward upon the ilium. In unilateral instances an asymmetric pelvis is produced; in bilateral instances the pelvis becomes contracted above and expanded below. In the one-sided cases the symptoms that are most prominent are limping and shortening of the affected limb, while the head of the femur may be detected in the abnormal position; the trochanter is found above Nélaton's line; the mobility of the limb may be increased; the pelvis is flexed and greatly tilted upward, with resultant production of scoliosis and lordosis; the thigh and gluteal region undergo a process of atrophy. The bilateral deformity results

in a shortening of the limbs, a large body, a waddling gait, and a degree of lordosis. Rachitic lordosis, which produces a similar gait, may be recognized by the immovability of the head, which is normally situated, as is also the trochanter. In the case of traumatic luxations the history is present, and there is immobility rather than mobility. In paralytic dislocations the reduction of the head into the normal acetabulum is easily accomplished, this being impossible in the case of congenital luxation; in addition, the entire leg shows the effects of the paralysis. The deformity of congenital luxation can be satisfactorily corrected by operative procedures in children under 10 years of age; in older children and adults the results are not good. Treatment by means of apparatus in any form is to be condemned. The best operation is that devised by Hoffa. This consists in placing the limb in such positions successively that the muscles which surround the joint are put upon the stretch and subcutaneously divided; the muscles which arise from the anterior superior spine and the fascia lata are divided through an open wound. The joint is then opened, the capsule dissected off, and the ligamentum teres extirpated. The acetabulum is then widened and deepened by means of a Volkmann spoon, which scrapes out the fat, cartilage, and spongy bone. The head of the bone is then replaced. If this shows a tendency to escape from the cavity anteriorly, it may be necessary to retain it by inward rotation. The patients may rise in from four to six weeks, but an apparatus should be worn for a year. The younger the child the more successful will the operation be.

A Simple Method of Controlling Epistaxis.

Cornick (*Journal of the American Medical Association*, March 25, 1899) states that all he has found necessary has been to fashion with a pair of scissors a dry plug of prepared sponge, in size and length comparable to the little finger of a 12-year-old boy. This should be carefully soaked in boiled water, to free it of grit, squeezed dry to free it of unnecessary fluid, and inserted its full length, gently, along the floor of the bleeding nostril. No styptic is necessary; it would be needlessly irritant. The expansive pressure of the soft sponge against the bleeding site, increased by the coagulation of a few drops of blood in its interstices, will check the bleeding at once. It should be removed in twelve hours, and under no circumstance allowed to remain longer than twenty-four. Melted vaseline, containing .5 per cent. of carbolic acid, applied with a medicine-dropper in liberal quantities, is the only local treatment called for afterwards.

A New Urinary Disinfectant.

Wilcox (*Medical News*, November 12, 1892) speaks favorably of the value of urotropin as a disinfectant of the urinary tract. The drug is produced by the union of ammonia with formaldehyde, and appears in the form of colorless crystals. It renders alkaline urine acid in reaction, and exerts such an inhibitory effect upon the development of bacteria that they do not grow in urine in which it has been excreted, even after artificial inoculation. Cases of enlarged prostate, of phosphaturia, of acute specific urethritis, and of cystitis are reported in which excellent results followed the use of urotropin. The dose is thirty grains per day. It is also recommended as a disinfectant before operations on the urinary tract.

THERAPEUTICS.

UNDER THE CHARGE OF

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AND

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Heroin.

Leo (*Deutsche medicinische Wochenschrift,* March 23, 1899; *British Medical Journal,* April 29, 1899) discusses the value of this new derivative of morphine introduced by Dreser. Heroin has a particular action on the respiratory centres, lessening the frequency but increasing the depth of the breathing. Leo has employed it in many cases during the past few months. Dreser recommended a dose of from 0.01 to 0.005 gramme, but the author has seen unpleasant results, such as giddiness, nausea, and once even fainting after 0.01 gramme, so that he does not give more than 0.005 gramme at a time. The narcotic action of heroin is much less than that either of morphine or codeine. Thus in sciatica, trigeminal neuralgia, cardialgia, including the pain due to gastric ulcer and muscular rheumatism, it either did not relieve the pain or did so only momentarily. In the same way its action in allaying cough is only slight. The author found its action exceptionally satisfactory in the various forms of dyspnea. It increased the duration of inspiration and the amount of air taken in. Dreser recommended it in the different forms of air-hunger. Leo has himself employed it in two cases of uremic dyspnea, eight cases of marked emphysema, fifteen cases of chronic bronchitis without obvious emphysema, and five cases of bronchial asthma. Only in one case of emphysema and two of chronic bronchitis was no good effect noted. Its action was almost magical in some cases. After one or two powders the patients were able to sleep in the recumbent posture. The author gives details of illustrative cases. When the drug was discontinued in emphysema and chronic bronchitis the symptoms mostly returned, but in many cases there was an interval of from eight to fourteen days. Sometimes the expectoration became more difficult after the use of heroin, and for this the author combined it with potassic iodide. The author says that it is to be expected with confidence that heroin will be permanently found to be a valuable remedy in diseases accompanied by dyspnea. Eulenburg (*Deutsche medicinische Wochenschrift,* March 23, 1899) has used a 2-per-cent. solution of heroin hydrochlorate for subcutaneous injection, the single dose being from 0.25 to 0.5 cubic centimetres of this solution, or 0.005 to 0.01 gramme of the solid. Thus the doses of heroin are less than those of morphine. Only on two occasions has the author used more than the above-named doses. Once he injected 0.02 gramme in a patient accustomed to morphine, and once 0.012 gramme in a woman with sciatica. In both cases unpleasant symptoms arose; thus in only exceptional cases should 0.01 gramme be given in a single dose, and it should only be gradually increased. The action of heroin, in allaying cough and in diminishing attacks of asthma and dyspnea is more rapid when given by subcutaneous injection than by the mouth. Eulenburg thinks that it possesses a more marked narcotic and antineuralgic action than is attributed to it by Leo. He has found it of more special

value in those long accustomed to the use of morphine. It is even possible that heroin may be of service in cases of the morphine habit. The hydrochlorate of heroin can also be given by the mouth, and here the single dose should not exceed 0.005 to 0.01 gramme. Although the poisonous dose of heroin has been shown experimentally to be 100 times the therapeutic dose, yet it is undesirable to exceed 0.03 gramme until more information is at hand. Finally, the author refers to the restrictions which should be put on the sale of heroin.

Apocynum Cannabinum.

Dabney (*Therapeutic Gazette,* Vol. xxii, 1898) states that he has employed apocynum cannabinum for twenty years. It does not cause diaphoresis or expectoration, and emesis and catharsis follow only its improper use. Its great value depends on its powerful diuretic action. Under its use one to two gallons of urine may be passed daily. The withdrawal of apocynum for general use Dabney ascribes to the substitution of *apocynum androsemifolium,* which latter is wholly inert. The drug in the market is unreliable, and so has fallen into disuse. A tincture, fluid extract, or infusion of the pure drug is recommended. The dose of the tincture is twenty drops, increased to thirty drops, thrice daily. The writer has found the drug most serviceable in the dropsy of cardiac, renal, and hepatic disease.

Naphthalin in the Treatment of Ulcers.

H. J. Takowlew (*Vratch,* No. 4, February 4, 1899; *British Medical Journal*) says that observations extending over several years have convinced him that naphthalin possesses very great therapeutic powers in promoting the healing of extensive sores and ulcers of the skin. The special benefits are particularly obvious in cases of chronic ulcer of the leg. The irregularly shaped ulcer, with its profuse discharge and ragged edges, is rapidly converted into a healthy ulcer, the base of which becomes covered with healthy granulations. Inflammation and edema of the surrounding skin also subside. The beneficial effects are usually marked after the first week of treatment, being manifested by the diminution of the discharge, the change in aspect of the ulcer, and by new granulations. Takowlew, who has employed this drug for the last four years, recommends the following method of application. A piece of cotton-wool corresponding to the size of the ulcer is first dipped for a few minutes in an antiseptic lotion; then naphthalin is spread on it and put on the sore parts; over this a piece of gutta-percha tissue is placed and the whole secured by a bandage, care being taken that the parts previous to application have been bathed, washed, and carefully cleaned. At first the bandage is changed after eight or ten days; later it may be left for a longer period.

Diphtheria Antitoxin.

The Committee of the Clinical Society of London reports the results obtained in 633 cases of diphtheria treated with antitoxin. The conclusions arrived at were as follows:

(1) The general mortality is reduced one-third.

(2) The mortality in tracheotomy falls by one-half.

(3) Extension of membrane to the pharynx very rarely occurs after the administration of antitoxin.

(4) The duration of life in the fatal cases is decidedly prolonged.

(5) The number of fatal cases is less when antitoxin is used early in the illness than in those which do not receive it until a later period.

(6) The frequency of the recurrence of paralysis is not diminished, but the percentage of recoveries in cases with paralysis is slightly increased.

(7) Rashes are produced in about one-third of the cases, and are attributable to the antitoxin.

(8) Pain and occasionally swelling about the joints are produced in a small number of cases.

(9) Even when used in very large doses no serious ill effects have followed the use of antitoxin.—*The Practitioner,* June, 1899.

General and Local Bloodletting in Children.

Baginsky (*Berliner klinische Wochenschrift,* No. 35, 1898) states that there are only two conditions in childhood in which local bloodletting is indicated, and these are simple convulsions and uremic convulsions. When simple convulsions do not yield to ordinary remedies—warm baths, bromides, chloral, ice, chloroform—local bloodletting may be employed. Baginsky states that he feels justified in recommending this treatment, since he has repeatedly found in fatal cases of this kind marked cerebral congestion. In uremic convulsions local bleeding is especially indicated, on account of the high arterial pressure and the toxic and hydremic condition of the blood.

In uremic eclampsia leeches to the head are often productive of strikingly beneficial results. General bloodletting he has found useful in croupous pneumonia attended by marked dyspnea and cyanosis, and in heart-disease when suffocative asthma and cyanosis are present. The writer reports a case of lobular pneumonia in a girl of 7 years, who was cyanotic and pulseless, in whom he opened the left radial artery and abstracted eighty cubic centimetres of blood. The patient subsequently made a complete recovery.

Ichthyol in Anal Fissure.

Conitzer (*Münchener medicinische Wochenschrift,* No. 3, 1899) has found ichthyol very useful in the treatment of anal fissure. He states that a cure sometimes results in a few days. He applies the pure drug twice daily, having first cocainized the part to lessen the pain.

Infiltration Anesthesia.

Heinze (*Archiv für pathologische Anatomie und Physiologie,* 1898, Band cliii, Heft 3) has conducted a series of experiments that are of great value in determining the local anesthetic power of various agents that are now in vogue for this form of anesthesia.

The tests were not made upon animals or upon various individuals seen in the course of clinical work, but upon his own person.

The action of varying anesthetic solutions he found to be due entirely to the amount of cocaine they contained, and not to peculiar properties that have from time to time been attributed to the combined action of their other constituents.

His experiments further demonstrated that the action of eucaine-B and cocaine were equal. One reason of this is that, as shown by Braun's researches, their osmotic tensions are about the same. The anesthesia which they produce in 0.1 per cent. and still weaker solutions last about fifteen minutes. The irritant action of eucaine-B is less even than that of cocaine. Five-per-cent. and six-per-cent. solutions were not as painful when injected as cocaine solutions of the same strengths.

The eucaine-B solution was found to be less toxic than cocaine, and has the advantage of being capable of sterilization. He recommends its employment in place of cocaine, and that it should be generally employed in infiltration anesthesia in weak solution, as in the following formula:

Eucaine-B	1½ grains.
Sodium chloride	12 grains.
Distilled water	3¼ ounces.

Such a solution is capable of being sterilized at any time without interfering with its efficiency. It causes no swelling, and, therefore, does not injure the tissues or interfere with primary union. The eucaine-B is the only anesthetic in the solution, the salt simply preventing irritation.—*American Journal of the Medical Sciences,* June, 1899.

Membranous Enteritis.

Einhorn (*Medical Record,* January 28, 1899) lays much stress on the nervous character of membranous enteritis. He believes that achylia also plays an important part. Although achylia is comparatively rare, he found it in five of twelve cases of membranous enteritis. The casts thrown off by the bowel consist of mucus mixed with dried-up epithelial cells. In discussing the treatment he states that a deficient, light, or fluid diet is unsuitable. An ample diet with plenty of vegetable is most suitable. The intestines should be gradually trained to master the foods customary in healthy individuals. During the attacks the intestines should be washed out with a cleansing enema of warm salt water (one teaspoonful to the quart), warm applications applied to the abdomen, sedatives given for the pain, and a light diet, and rest in bed prescribed. During the intervals free from pain there should be methodical use of oil enemata, the enema being given at night and retained during the night, if possible. The enema should be given every night for three weeks, and subsequently every second night, and the interval gradually increased, the treatment being continued for eight months. The author regards most highly these oil enemata which exert a favorable influence upon the constipation and diminish or check the secretion of mucus. The frequency of enteroptosis and anomalies of digestion must be borne in mind and suitably treated, and neurotic symptoms should not be neglected.

Pilocarpine in Granular Kidney.

West (*British Medical Journal,* March 11, 1899) in the Lettsomian Lectures, which he recently delivered, states that of drugs there is none more useful than pilocarpine given in small doses, two or three times a day, by the mouth, or in urgent cases *sub cutem.* Thus the headache, irritability by day and restlessness

by night, vomiting and digestive disturbance, a foul tongue, and a dry skin, may all rapidly yield to a dose or two of pilocarpine, and the patient be restored to comfort, or even threatening symptoms of uremia be removed. There is one noteworthy fact about pilocarpine in chronic renal disease,—namely, that it often does not produce the sweating which, under normal circumstances and in similar doses, it causes, and yet without sweating its effects are striking.

Dr. West has found in three or four cases that the administration of tablets of renal extract two or three times a day caused an increase in the amount of urine and an improvement in the general condition.

Picric Acid in Superficial Burns.

MacDonald (*British Medical Journal,* May 13, 1899) states that it is obvious that an antiseptic which, by its mode of action, directly promotes rapid healing will give the best results in such wounds as burns and scalds. By the use of picric acid nature's method can be closely imitated, and instead of hindering the healing process it may be directly assisted.

The artificial scab produced by picric acid consists of coagulated albuminous fluids, reinforced by masses of detached epidermis. The scab is formed at once, thus lessening the chance of sepsis subsequently occurring under it. It has always been an axiom in burn treatment to preserve as far as is practicable the raised epidermis of the vesicles, for no dressing we may substitute can protect the underlying injured surface half so well. Picric acid preserves this layer, and by virtue of its hardening action transforms it into a large protecting scab. Healing in burns of the first and second degrees takes place rapidly without suppuration.

The technique of the method is very simple. The punctured vesicles must be accurately flattened out. No impermeable material must be placed over the simple gauze, which should be dipped in a saturated aqueous solution of the acid and applied after being squeezed fairly dry. Absorbent wool and a light gauze bandage further encourage evaporation, and thus retard the growth of any bacteria which may have gained access to the wounded surface. A pair of thin rubber gloves may be used to avoid the unpleasant staining of the dresser's hands by the acid. Renewal of the dressing need not take place for four or five days, unless there are clear signs of suppuration. The gauze is best carefully stripped off in a dry condition.

In the writer's experience picric acid has not caused toxic symptoms either in children or adults. He ventures to say that a closer examination of the so-called toxic cases will reveal the fact that the symptoms were precisely those of septic absorption so commonly observed in grave burns under any treatment.

The advantages of picric acid in superficial burn treatment may be briefly summed up as follows: (1) Simplicity of application; (2) painlessness; (3) rapidity of healing due to (*a*) epidermization under scabs, (*b*) a favoring of epithelial growth, (*c*) a minimum of suppuration; (4) absence of local irritation, or of general toxic effect; (5) a smoother, more natural cicatrix than that obtained with other methods.

Reaction in Cases of Wounds and Ulcers treated by Oxygen-Gas.

Geo. Stoker (*Lancet,* December 10, 1898) states that in all cases thus treated there was observed a distinct toxic reaction occurring during the course

of treatment, varying from a few days to several months, and that after the occurrence of such reaction the wound or ulcer healed much more rapidly.

The discharges in all the cases were carefully examined, and found to contain pure growths of staphylococcus albus, aureus, and citreus.

The favorable action of oxygen would seem to depend upon the formation of an antitoxin from the secretion of the micro-organisms present in the wound. Acting on this belief antitoxins have been prepared for many cases by passing a stream of oxygen through a broth culture of the micro-organisms from each case, the broth being then dropped on the wound, where it is absorbed.

The result of this method of treatment have been satisfactory, not only in cases of non-malignant character, but also in cases of lupus and of rodent ulcer.

The points of interest that have been observed are:

(1) That healing was not delayed, but was accelerated during and after the time when the temperature (reaction) was highest.

(2) The wounds did not become inflamed or dry, and that the discharge continued healthy.

(3) That there was a good deal of inflammation of the lymphatics and some swelling of the glands in the vicinity of the ulcer.

(4) That in some cases small secondary areas of infection developed, where small abscesses formed, which burst and then rapidly healed.

(5) In all cases observed the general malaise or disturbance was small in comparison to the height of the temperature.

Concluding, the paper states: That perhaps working in this way, and preparing antitoxin as above described, that a satisfactory treatment of malignant disease may be ultimately reached.

OBSTETRICS.

UNDER THE CHARGE OF

BARTON COOKE HIRST, M.D.,

ASSISTED BY

W. A. NEWMAN DORLAND, M.D.

The Frequency of Contracted Pelves.

J. W. Williams (*Obstetrics,* May, 1899) has made a study of the frequency with which contracted pelves have been encountered in the obstetrical department of Johns Hopkins Hospital. In all of the cases the usual external measurements were made with a Martin pelvimeter, and in all but a few the diagonal conjugate was measured with the finger. In a few cases Skutsch's pelvimeter was used. With increased experience in pelvimetry he has learned to place less and less reliance upon external pelvic mensuration as a means of ascertaining the degree of pelvic contraction. This observation is especially true of colored women. His conclusions are as follows:

(1) In our material, the frequency of contracted pelves (13.1 per cent.) correspond very closely with the general average of frequency observed in Germany.

(2) This is due, in large part, to the presence of a large black population in Baltimore, 469 out of over 1000 cases being colored women.

(3) Contracted pelves are 2.77 times more frequent in black than in white women, and occur in 19.83 per cent. of the former and 7.14 per cent. of the latter.

(4) The statistics of Reynolds Crossen and myself indicate that contracted pelves are observed in about 7 per cent. of the white women of this country, or about once in every fourteen cases.

(5) Contracted pelves, accordingly, occur in our white women about as frequently as in many German clinics, notably Rostock, Breslau, and Basel.

(6) They occur quite as frequently as in Paris (Pinard and Budin), and more frequently than in Vienna.

(7) As every fourteenth white and every fifth colored woman possesses a contracted pelvis, the necessity for routine pelvimetry became apparent.

Glycosuria and Alimentary Glycosuria of Pregnancy.

Ludwig (*Wiener klinische Wochenschift,* March 23, 1899) gives a complete review of the history of these subjects, together with his own experiments in the same direction.

To Blot (1856) is due the credit of first demonstrating the existence of glycosuria in pregnancy and the puerperal state. The next advance in our knowledge did not come until 1877, when it was announced by Hofmeister and Kaltenbach that the puerperal glycosuria was due to lactose. In recent years the problem has assumed a multifold aspect, and widely divergent views have been maintained, and seemingly justified by experiment. Thus there is a spontaneous glycosuria which is occasionally present during pregnancy, and which is generally held to be always pathological, and to indicate the presence of a toxemia and, perhaps, threatened eclampsia.

The subject must not be confounded in any way with *induced* or alimentary glycosuria, which is not a pathological problem, but purely physiological, and refers to progressively diminishing capacity of the pregnant woman for assimilating large fixed quantities of dietary glucose, as compared with that of non-pregnant women.

The problem of puerperal sugar is a complicated one. According to some observers lactose is normally present in the urine at the time of the establishment of the secretion of milk. Others state that lactose is absent up to the last moment of the pregnant state, but present at the very beginning of the puerperium, and therefore considerably in advance of the establishment of the milk-secretion. Leduc, however, found lactose before confinement and glucose after, and hence believes that the presence of one sugar, in excess, may mask the presence of the other. Towards the end of pregnancy lactose appears, and either masks or is substituted for glucose by the time the milk is formed. It is evident then that, according to Leduc, the glycosuria of pregnancy is not exceptional, and pathological, but physiological and normal, and here his views differ from those of the majority. The question of sugar, in connection with child bearing, is further complicated by the occasional presence in the urine of maltose before confinement, and of the cane-sugars during the puerperium.

Ludwig's experiments are more radical and thorough than those of his predecessors, but his results rather serve to add to the obscurity than to simplify our existing knowledge. He insists that mere qualitative tests for sugar, irre-

spective of recovering appreciable amounts by quantitative analysis, must not be recognized. Since, by some tests, glucose is normally present in human urine in infinitesimal amounts, it is evident that something more than this kind of testing must be employed if these problems are ever to be solved, and this axiom applies particularly to the recognition of pathological glycosuria in the antepartum state. It is also necessary to test these cases repeatedly, in order to make out a case of disease, as sugar appears to occur capriciously at times in the pregnant. With regard to the law, enunciated by Hofbauer, that the pregnant woman progressively fails to oxidize large amounts of dietetic glucose, Ludwig fails to find anything corroborative, and he therefore seeks to demolish this new test for pregnancy, and the period of pregnancy. The only thing which Ludwig will admit is this: Whenever more than 1 per cent. of the dietetic sugar of ordinary mixed diet appears in the urine of the supposedly pregnant woman, the fact *may* have some diagnostic value.

It would appear that the whole subject of glycogen and sugar ought to be specially studied in connection with the subject of reproduction.

Retrodisplacements of the Pregnant Uterus.

Storer (*Boston Medical and Surgical Journal,* March 9, 1899) describes a case of pregnant uterus which was completely retroverted and incarcerated, and in which taxis, after three attempts on consecutive days, was finally successful. Storer thinks a distinction should be emphasized between pregnancy in a retroverted uterus and retroversion of a pregnant uterus, his patient suffering from the latter. As to frequency, Martin has seen 121 incarcerations in 24,000 patients.

Spontaneous reposition is limited by four factors,—viz., adhesions, sacral angle, character of and degree of displacement. If the condition persists, symptoms do not appear before the tenth week or even later in large pelves. Symptoms vary in accordance with the displacement, whether of version or flexion, and also with the degree, whether first, second, or third.

In incarceration we usually find an exaggerated color of the vulva and a bulging of the perineum, which is often marked, and may even amount to rupture.

In flexions, where the cervix can usually be readily examined, we do not find the softening which usually accompanies pregnancy. Great hypertrophy is occasionally present. When the cervix disappears out of reach above the pubes (this may even occur in flexion) the condition is difficult of diagnosis.

Urinary retention may complicate, as in the author's case, and it is not always possible to pass a catheter.

If incarceration persists, abortion is likely to occur, and there is naturally much difficulty in the expulsion of the fetus. The latter may die and a condition like missed labor results, with retention of fetus for months. If abortion should not occur, we must fear death from rupture of the bladder, anemia, or sepsis, starting from the bladder.

The first step in treatment is to empty the bladder, which may at times be done in the knee-elbow position. Every variety of catheter and of manœuvre and posture has been tried in these cases. Aspiration is at times indispensable.

The same variety in therapeutic resource has been required in the taxis. Rubber bags in the vagina filled with air, or shot, in connection with manual taxis are mentioned at length by the author.

If the taxis fail, the urine must be drawn regularly and daily, and frequent attempts at reposition must still be attempted, such as the knee-elbow position and distention of the vagina with air, packing the vagina, etc. There is little chance of replacing a uterus after four and one-half months.

In extreme cases abortion may be brought about, while laparotomy, ventrofixation, Cesarean and Porro operations have all been performed. Symphyseotomy, which was resorted to in earlier times for this condition, has, curiously enough, not been tried since the revival of the operation.

PATHOLOGY.

UNDER THE CHARGE OF

JOHN GUITERAS, M.D.,

ASSISTED BY

DAVID RIESMAN, M.D.

Hydrocephalus and Hypoplasia of the Suprarenal Glands.

The origin of hydrocephalus must be sought in some obstruction to the outflow of fluid in the cerebral ventricles. In order to find the path taken by ventricular fluid when the pressure was increased, Czerny (*Centralblatt für allgemeine Pathologie und pathologische Anatomie,* April 1, 1899) injected a solution of Berlin-blue into the ventricles of rats, and searched for the first appearance of the fluid in the abdominal cavity. The color became visible first in a lymph-vessel, which sends a branch to the adrenals, and then passes into the lymph-glands of the pelvis. This observation led Czerny to examine the suprarenals in cases of hydrocephalus. He did this in five typical instances and found, microscopically, a marked hypoplasia of the glands, the medulla being practically wanting.

Macroscopically the adrenals showed nothing abnormal. In some of the animal experiments the injection-fluid penetrated so abundantly into the suprarenals that the latter and the near-by lymph-nodes were stained blue even macroscopically. In a dog that had hydrocephalus it was impossible to inject the lymph-vessels or blood-vessels by way of the ventricles. Whether there is in all animals a communication between the lymph-vessels of the suprarenal glands and the ventricular cavity the experiments have not definitely determined. If future investigations show the existence of suprarenal hypoplasia in congenital hydrocephalus, it will be possible by an examination of the adrenals to determine whether the hydrocephalus was acute and recent or congenital.

Etiology of Cancer.

Bra (*Presse Médicale,* February 22, 1899) has conducted a most interesting set of experiments with the hope of throwing some light on the etiology of carcinoma. In these experiments a pure culture of fungus obtained from human carcinoma were injected into animals and in them tumors produced, which showed microscopically the typical structure of fibrosarcoma and of carcinoma.

He also states that in these artificially produced tumors, and in the natural human tumors, he was able to isolate the parasite.

DERMATOLOGY.

UNDER THE CHARGE OF

LOUIS A. DUHRING, M.D.,

ASSISTED BY

M. B. HARTZELL, M.D.

A Contribution to the Study of Ainhum.

De Brun (*Annales de Dermatologie et de Syphiligraphie,* No. 4, 1899) reports a case of this curious affection, and concludes from its study and from the study of a case previously reported as follows: Contrary to the commonly received opinion, ainhum is not a disease peculiar to the negro, both the author's cases having occurred in the Jewish race. It is not characterized simply by a circular constriction of a toe ending in amputation, but is accompanied by trophic, vasomotor, sensory, and motor troubles affecting the entire lower extremity. The trophic troubles are found in the skeleton, muscles, and the integument. The phalanx disappears at the site of the circular constriction, and occasionally a neighboring phalanx also disappears. There is shortening and thickening of the skeleton of the foot, and effacement of the plantar arch. There is very appreciable atrophy of all the muscles of the lower extremity on the diseased side. There is thickening of the skin with more or less desquamation; profound alteration of the nails, and hypertrophy of the hairs. The vasomotor troubles are characterized by a great lowering of the local temperature with symptoms of asphyxia of the lower extremities, or an exaggeration of the normal temperature. At times there is exaggeration of the secretion of sweat. There is thermoanesthesia and analgesia, the more pronounced as one approaches the extremity of the foot. The reflexes are abolished. The proper movement of the foot is interfered with. All the symptoms may be explained by assuming a neuritis of the lower extremity, which is possibly of traumatic origin.

The Treatment of Leg Ulcers.

Freudenthal (*Monatshefte für praktische Dermatologie,* February 1, 1899) before beginning the treatment of the ulcer itself thoroughly cleanses the surrounding parts with solutions of permanganate of potassium and frequent washings with soft soap. The surface of the ulcer is energetically rubbed with compresses wet with solutions of formol, hydrogen peroxide, or mercuric bichloride. If the parts surrounding the ulcer are infiltrated, ice-cold compresses of acetate of alumina and elevation of the limb are to be used. Necrosis, induration, suppuration, and undermining may be quickly gotten rid of by the energetic use of the curette or the Paquelin cautery. The employment of the first-mentioned should be preceded by thorough disinfection in order to prevent the resorption of purulent material through the small vessels thus laid open. Dressings of carbolic acid are to be avoided on account of their disposition to produce gangrene. Frequent washings with sublimate solutions are also to be avoided, since

they cauterize the young granulations. The author has no preference for any particular medicament, but lays special weight upon the necessity for frequently changing the remedy, believing that this should be done at least every third day. When cicatrization has once taken place great care must still be exercised that relapses do not occur. In concluding, the author repeats that healing of leg ulcers does not depend so much upon the use of any special medicament as upon frequent change of the remedies employed.

Orthoform in Diseases of the Skin.

Brocq (*Annales de Dermatologie et de Syphiligraphie*, No. 4, 1899), at a *séance* of the Société Française de Dermatologie et de Syphiligraphie, reported his experience with this drug in pruriginous affections of the skin. In pruritus without eczematization it produced during the first twenty-four or forty-eight hours a marked diminution of the itching. If the applications were prolonged, at the end of two or three days the calmative effect of the orthoform became much less marked, and an artificial eruption characterized by redness and eczematization appeared, accompanied by severe itching. In pruriginous eczemas the medicament was not so well borne, no patient being able to tolerate it more than three or four days. According to Brocq orthoform is able to produce upon the sound skin artificial eruptions of a special character, which are of two kinds, —one due to the direct irritant action of the drug, the other to its absorption.

Herpes as Premonitory of Chancre.

Audry (*Journal des Maladies cutanées et syphilitique*, December, 1898) calls attention to the fact that an attack of preputial herpes may be premonitory of the initial lesion of syphilis, and reports several cases of this kind in support of the statement. An attack of herpes occurring in an adult man without appreciable cause other than a suspicious coitus should, according to the author, suggest the probability of a chancre appearing at a later period.

A New Agent for the Treatment of Alopecia Areata.

MacGowan (*Journal of Cutaneous and Genito-Urinary Diseases*, May, 1899) has found trikresol a useful agent in the treatment of alopecia areata. Before making the first application the patches are thoroughly cleaned with benzine. After this preparatory cleansing, the remedy is applied pure to the scalp, and in 50-per-cent. alcoholic solution to the face. It is well rubbed into the patches and into the roots of the hairs surrounding the patches, with a small cotton swab. The applications produce some burning, but this speedily subsides. The whiteness which is at first produced is followed by hyperemia, and, on the scalp, by transudation of serum; on the face vesication occasionally occurs. In eight cases treated by this agent the average duration of treatment was two and one-half months.

Serotaxis by Means of Caustic Potash Solutions as a Method of Diagnosis.

Frickenhaus (*Monatshefte für praktische Dermatologie*, February 1, 1899), having observed that caustic potash, when applied to the skin, sets up a flow of

clear serum towards the point of application, suggests the employment of this property for diagnostic purposes, since by these streams of serum micro-organisms seated in the deeper parts of the skin may be brought to the surface. In examining some cases of lupus in this manner he has succeeded in finding tubercle bacilli in the serum thus produced. Solutions of caustic potash, varying in strength from 3.7 per cent. to 50 per cent., are also recommended in the treatment of lupus, ulerythema, and chronic eczema.

The so-called Premycosic Stage of Mycosis Fungoides.

Hyde and Montgomery (*Journal of Cutaneous and Genito-Urinary Diseases,* June, 1899) conclude from a study of forty-five published cases, including two of their own under observation for a considerable period, that the early dermatoses preceding the appearance of the tumor-formation have many characteristics in common, and are but the varied expressions of a definite morbid process. They regard the malady as distinct from sarcoma, and as differing markedly from the recognized infectious granulomata in that its manifestations are confined to the skin. The eruptions occurring in the early periods are regarded by the authors quite as significant of a general disease as the tumors themselves; and the affection is believed to be of systemic origin, although this cannot yet be demonstrated.

CORRESPONDENCE.

"UNSINN."

To the Editors of University Medical Magazine:

In his review (January, May, June, 1899) of my "Memorandum," published in the University Medical Magazine, May, 1896 ("A Possible Specific for Beriberi"), Dr. Scheube, the paid reviewer, has this to say: "Ich begreife ebenso wenig, wie jemand solchen Unsinn schreiben als wie eine Zeitschrift solchen Unsinn aufnehmen kann."

Dr. Scheube evidently is ignorant of our American definition of the word. Here is a clipping from the *New York Sun,* of May 20, which may serve to instruct him:

"Professor Virchow, scientist and statesman, arises to remark that 'nations let themselves be led astray by deceptive words, such as glory, dignity, and honor, to which they append, without reflection, the fateful adjective national. Rules are often as weak as their subjects, and instead of finding satisfaction in the serious fulfilment of their duties only think of catching the approval of the most contemptible part of public opinion. The government of the United States has lately given a pitiable example of such weakness. That civilized land was plunged into a war, barbarous and unjust,—for all wars are such,—by the criminal action of brainless demagogues and the notorious in-

capacity of its rulers.' The professor says that all wars are 'barbarous' and 'unjust.' It would be interesting to know if he really thought, for example, that the war which resulted in a consolidated Germany was such. As for his criticism of us, we can stand it."

ALBERT S. ASHMEAD.

MISCELLANEOUS.

MEDICAL PROGRESS IN THE STATE OF WYOMING.

BY R. HARVEY REED, M.D., (University of Pennsylvania),

ROCK SPRINGS, WYO.,

President of the Wyoming State Medical Society; Surgeon-General of Wyoming; Division Surgeon, Union Pacific Railway.

ALTHOUGH Wyoming is one of the youngest States in the Union, and geographically is located on the very backbone of the continent, yet, considered from a medical stand-point, her position in medical science may well be compared in some respects, as regards her position and elevation above sea-level, with the sandy flats of New Jersey.

As early as 1876, long before the Territory of Wyoming was dreaming of the question of Statehood, its territorial Legislature passed medical laws which were superior to many of its senior States in the Union of that time. While it did not provide for a medical board, and the law was lenient in some of its features, yet, at the same time it practically provided that no one should practise medicine in the Territory of Wyoming who had not obtained a diploma and registered the same with the county clerk, under oath, that the same was *his* diploma and not any one else's.

The laws passed at that time were codified in 1887, and after our Territory was admitted to Statehood, they were made a part and parcel of the medical laws of this new commonwealth, until the meeting of the fifth Legislature, which has just closed its session, when a new bill was presented and enacted into a law. Among other medical statutes which this State may well be proud of, and, in fact, few others have provided for, is that "any physician and surgeon, who may be called upon to testify as an expert, shall be entitled to a fee of $5.00 for a half-day or less, and for more than a half-day $10.00, and when called upon to make a post-mortem, shall be entitled to a fee of $30.00, provided the post-mortem is actually made."

It will be seen by these few extracts from our laws that the citizens of this so-called "wild and woolly west" Territory have for more than twenty years protected themselves by protecting the medical profession of the Territory, and more recently of the State, and while other States had no provision worth mentioning for the protection of its medical profession, this Territory was far in advance, by having fairly good laws, and in some respects exceedingly good laws for its protection.

The rapid advancement of the State in industries of various kinds, in population and in wealth, indicated to the medical profession that it was their duty to organize a State medical society, which took place at Rawlins, Wyoming, May 13, 1898, when a constitution and by-laws were adopted, which put the medical profession of this State on an equal footing with that of any other State in the Union in this connection. Among other things provided for in this constitution was a Committee on Legislation, whose duty it was to look after the medical legislation of the State, and provide, if possible, such needed legislation as would have a tendency to advance the medical and surgical profession of our commonwealth. On the 1st of November, 1898, the second meeting of the Wyoming State Medical Society was held, and a more thorough organization was completed. The writer had the honor to be elected president at the first meeting, and re-elected to the same position at the second. The matter of legislation was taken up, and a committee of three was elected by the Society, consisting of the president *ex officio,* Dr. C. H. Solier, superintendent of the Wyoming State Hospital for the Insane, at Evanston, Wyo., and Dr. G. G. Verbryck, State senator from Cambria, Weston County. Dr. Verbryck also held the position of second vice-president of the State Society, and Dr. Solier the position of treasurer.

The entire committee set to work very shortly after the meeting at Rock Springs, and gathered together the various laws of the different States, with a view to applying them to this State. In this connection, it must be remembered that we have a large State, so far as territory is concerned, and laws which would apply to other States would not be applicable to this one for want of railroads, the existence of immense mountain ranges, and the different classes of industries, which made it necessary for certain modifications in order to get a law through the Legislature that would be operative, and would not work an injury to those who are on the frontier, and probably hundreds of miles from a practising physician. After taking all these local questions into consideration, the committee prepared and placed in the hands of their representative, Senator Verbryck, a bill, which in their judgment covered the ground as practicable as possible. When the

senator and his committee looked it over it was found necessary to make some changes which were of a minor character, and after making the changes, he succeeded in securing the following law, which we feel justified in saying has placed a protection around the people of this rapidly growing State, and given to the medical profession a law which will guard them against the invasion of quacks and charlatans, equal to the law of many States, much better than some, and equally as good as the average.

Thanks to his Excellency, the governor, who has the power to appoint the board, and who is a man of good, deliberate judgment, and a friend of the highest standard of the medical profession, a board was appointed in accordance with the law, composed of three members of the medical profession, all of whom are graduates of regular schools.

The bill became a law on the 14th day of February, 1899, the board was appointed on the 16th day of the same year, and organized the first of March following: electing Dr. S. B. Miller, of Laramie, Wyo., president, Dr. George P. Johnson, of Cheyenne, Wyo., secretary, and Dr. M. C. Barkwell, of Cheyenne, treasurer.

Fortunately, Wyoming has had a medical law which prohibited any one from practising in the State who did not have a diploma, and required a person who practised medicine in the State of Wyoming to register his diploma with the county clerk. This has prohibited a great many so-called "legal practitioners" locating in this State, who by this law are permitted to practise medicine without a diploma, provided they have practised medicine ten years, five of which must be in Wyoming.

We believe there is no other State in the Union which can boast of a State Board of Medical Examiners all of whom are graduates of a regular school of medicine of high standing, and who have opportunities, notwithstanding the law is not all that could be desired, of raising the medical standard, and keeping it at such a point as to prevent the influx of any members of the medical profession who are not up to the average standard of the best modern medical schools of the United States. Our personal knowledge of the *personnel* of the board leads us to believe that they will look well to their honors and to the high standard of the medical profession of the State of Wyoming.

The following is a copy of the law as it was approved:

PRACTICE OF MEDICINE.

Chapter 18, Session Laws 1899.

An Act to regulate the practice of medicine, surgery, and obstetrics in the State of Wyoming, and to repeal Chapter one of Title thirty-four of the Revised Statutes of Wyoming of 1887.

Be it enacted by the Legislature of the State of Wyoming:

SECTION 1. That the Governor, by and with the advice and consent of the Senate, shall appoint three persons, who shall be electors of this State, who shall constitute the State Board of Medical Examiners. One of the persons so appointed shall hold his office for four years, and the other two for two years, and until their successors are appointed and qualified: Provided, That the first board shall be appointed upon the passage of this act, and shall consist of one member for four years and two members for two years, and in each succeeding legislative year there shall be appointed one member for four years and one member for two years. And provided further, That all vacancies occurring in the Board of Medical Examiners, by death, resignation, or removal from the State, or otherwise shall be filled by appointment by the Governor, and the person so appointed to fill any such vacancy shall hold his office until the expiration of the term he was appointed to fill. No person shall be appointed a member of the State Board of Medical Examiners who is not eligible to registry in accordance with this act.

SEC. 2. The State Board of Medical Examiners shall organize within sixty days after their appointment by taking and subscribing an oath to faithfully discharge the duties of the office, and by the election of a president, secretary, and treasurer. It shall provide itself with such blanks and certificates as are necessary to comply with the provisions of this act, and with an appropriate seal, which shall be attached to all certificates and orders issued by the board. Said oath shall be filed with the Secretary of State.

SEC. 3. It shall be the duty of the State Board of Medical Examiners to pass upon the qualifications and determine the fitness of all persons who may desire to practise medicine, surgery, or obstetrics, or who may publicly profess to cure or treat disease, injury, or deformity in any manner whatever in this State.

SEC. 4. Every person practising medicine in any of its departments shall possess the qualifications required by this act. If a graduate in medicine, he shall present his diploma to the State Board of Medical Examiners for verification as to its genuineness. If the diploma is found to be genuine, and issued by a medical college of recognized merit, said college being a member of the American Association of Medical Colleges, the Homeopathic institutes, or the National Eclectic Medical Association, or any college of similar standing in foreign countries, and if the person named therein be the person claimed and presenting the diploma, the State Board of Medical Examiners shall issue its certificate to that effect, signed by the majority of all the members thereof, with the seal of the board attached, and such diploma and certificate shall be conclusive as to the right of the lawful holder of the same to practise medicine in this State; Provided, no person holding diplomas, certificates, or other credentials from schools or institutions other than those of recognized merit, as specified in this chapter, shall be permitted to practise in this State until he has passed a satisfactory examination before said board. Said examination may be in whole or in part in writing, and shall be of an elementary and practical character, and shall be upon the subjects following: Anatomy, physiology, chemistry, pathology, materia medica and therapeutics, hygiene, theory and practice of medicine, surgery, and obstetrics, and sufficiently strict to test the qualifications of the candidate as a practitioner. For the said examination a fee of twenty-five dollars shall be paid by the candidate to the treasurer of said board.

SEC. 5. The State Board of Medical Examiners shall receive through its secretary applications for certificates and examination. The president, or acting president, shall have the authority to administer oaths, and the board may take testimony in all matters relating to their duties; they shall issue certificates to all who furnish satisfactory proof of having received diplomas as provided in Section 4 of this act. The board shall prepare certificates for those entitled thereto. Said board shall hold annual meetings, and in selecting places to hold their meetings they shall, so far as it is reasonable, accommodate applicants residing in different sections of the State, and due notice shall be published of all their meetings.

SEC. 6. Said State Board of Medical Examiners shall examine diplomas as to their genuineness and character, and if the diploma shall be found genuine as represented and of a character hereinafter provided, said board shall receive a fee of five dollars from each graduate, and no further charge shall be made to the applicants except the fee for recording the same, as hereinafter provided. In case of application made by any person holding a diploma, as required by Section 5 of this chapter, for a certificate to practise within the State, it shall be sufficient for the applicant to present such diploma and proofs to the secretary of such board, and if such board be not then in session, such secretary shall inform the members of the board of such application, by writing or otherwise, as will be most practicable, of the facts upon which such application is based, and thereupon such members shall in writing advise such secretary as to whether such application be allowed or rejected, and, if allowed, the certificate shall be issued as in other cases in this chapter provided. The verification of the diploma shall consist in the affidavit of the holder and applicant that he is the lawful possessor of the same, and that he is the person therein named. Such affidavit may be taken before any person authorized to administer oaths, and the same shall be attested under the hand and official seal of such officer. Graduates may present their diplomas and affidavits as provided in this act, by letter or by proxy, and the State Board of Medical Examiners shall issue its certificate the same as if the owner of the diploma was present.

SEC. 7. The board shall be permitted to issue a certificate to any person who has not a diploma from some recognized college as contemplated in this act, but who has been actually engaged in the practice of medicine for a period of ten years, the last five of which shall have been in this State, upon the payment of five dollars, and making application as set forth in Sections 4 and 6 of this act, and filing proof by affidavit or otherwise, to the satisfaction of such board, setting forth the place of residence, time and places wherein such applicant has practised, and showing such applicant to be a person of good moral character and sobriety.

SEC. 8. Any person who shall make application to such board for admission to practise upon diploma, and such diploma be found to be fraudulent, or not lawfully owned by such person, such person shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined in any sum not exceeding one hundred dollars, or be sentenced to imprisonment for not more than thirty days, or punished by both such fine and imprisonment, in the discretion of the court.

SEC. 9. Every person holding a certificate from the State Board of Medical Examiners shall have it recorded in the office of the county clerk of the county in which he resides, and the date and place of record shall be endorsed thereon. Any person moving to another county to practise shall procure an endorse-

ment to that effect on the certificate from the county clerk, and shall record the certificate in like manner in the county to which he removes; and the holder of the certificate shall pay to the county clerk the usual fees for making the record.

SEC. 10. The county clerk shall keep in a book provided for that purpose a complete list of all the certificates recorded by him, with the date of the issue. If the certificate be based on a diploma, he shall record the name of the medical institution conferring it, and the date when conferred.

SEC. 11. The fees received by the State Board of Medical Examiners shall be kept in a fund to be known as the Medical Fund, and subject at all times to the warrant of the State auditor, drawn upon written request of the president, and attested by the secretary of the board, with the seal attached, for the payment of any and all expense made by said board.

SEC. 12. The State Board of Medical Examiners may refuse certificates to individuals guilty of unprofessional or dishonorable conduct, and they may revoke certificates for like causes. In all cases of revocation, the applicant or practitioner may appeal to the District Court of the county in which such revocation is made, which shall have power, after examination into the matter, to revoke the action of the board.

SEC. 13. Nothing in this act shall be construed to prohibit students from prescribing under the immediate supervision of preceptors, or to prohibit gratuitous service in case of emergency, and this act shall not apply to commissioned surgeons of the United States army and navy, or medical examiners of relief departments of railroad companies, while so employed, or any lawfully qualified physicians residing in other States or countries meeting registered physicians of this State in consultation, or any physician or surgeon residing upon the border of a neighboring State, and duly authorized under the laws thereof to practise medicine and surgery therein, whose practice extends into the limits of this State.

SEC. 14. Any person practising medicine or surgery in this State without complying with the provisions of this act, shall be punished by a fine of not less than fifty dollars, nor more than three hundred dollars, by imprisonment in the county jail for a period of not more than one year, or by both such fine and imprisonment for each and every offence, and each person filing or attempting to file as his own the diploma of another, or a forged affidavit of identification, shall be guilty of felony, and upon conviction shall be punished by imprisonment in the penitentiary for a term not to exceed three years.

SEC. 15. The State Board of Medical Examiners shall examine all persons upon the theory and practice of obstetrics who openly profess to practise obstetrics and midwifery, who do not have authority to practise medicine or surgery; and they may issue to such candidates and person or persons who shall pass a satisfactory examination, certificates which shall authorize and empower them to practise obstetrics or midwifery. No person shall practise obsterics or midwifery unless either a practising physician authorized to practise under the provisions of this act, or holding such certificates as are prescribed by this section; Provided, that nothing in this section shall be construed to prohibit persons from rendering services in cases of obstetrics or midwifery in cases of emergency.

SEC. 16. Any itinerant who has not qualified as hereinbefore provided, who shall sell or offer for sale any drug, nostrum, ointment, or appliance of any kind intended for the treatment of any disease or injury, or shall by writing,

printing, or other method, except by ordinary professional card or sign, publicly profess to cure or treat disease, injury, or deformity by any drug, nostrum, or in any manner whatever shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than fifty dollars nor more than one hundred dollars, and costs of prosecution, for each offence, and shall be committed until such fine and costs are paid.

Sec. 17. The secretary of said board shall be paid a salary, which shall be compensation for the actual work done in the performance of the duties of his office, the amount thereof to be fixed by the board, not to exceed the sum of fifty dollars per annum, the same to be paid out of the Medical Fund by warrants drawn by the State auditor, upon there being filed with the auditor a certificate to be signed by the president and secretary of the board, with the seal of the board attached, showing that the secretary has acted in that capacity for the time for which his bill is presented. The salary shall be paid annually. The members of the board shall receive the sum of five dollars per day while actually employed in attending meetings of the board, or in carrying out the provisions of this act, and shall also receive their actual travelling and necessary expenses while engaged in the performance of their said duties to be paid out of the Medical Fund upon warrants to be issued by the State auditor, and all bills therefor shall be accompanied by a certificate signed by the president and secretary of the board, with the seal of the board attached, attesting the correctness of the bill.

Sec. 18. All acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

Sec. 19. This act shall take effect and be in force from and after its passage.

Approved February 14, A.D. 1899.

THE WILLIAM F. JENKS MEMORIAL PRIZE.

The fifth triennial prize of five hundred dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "the various manifestations of lithemia in infancy and childhood, with the etiology and treatment."

The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with Obstetrics, or the Diseases of Women, or the Diseases of Children;" and that "the Trustees, under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said Trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia."

The prize is open for competition to the whole world, but the essay must be the production of a single person.

The essay, which must be written in the English language, or if in a foreign language, accompanied by an English translation, must be sent to the College of Physicians of Philadelphia, Pennsylvania, U. S. A., before January 1, 1901, addressed to Richard C. Norris, M.D., chairman of the William F. Jenks Prize Committee.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

James V. Ingham, M.D.,
Secretary of the Trustees.

ACUTE DIFFUSE GONOCOCCUS PERITONITIS.

Harvey W. Cushing (*Bulletin of the Johns Hopkins Hospital*, May, 1899) reports two cases of gonococcus peritonitis in refutation of Bumm's original assertion that gonorrheal processes remain limited to surfaces lined by mucous membrane. The writer states that the gonococcus has made a place for itself as one of the most important pathogenic bacteria. Few organisms, not even the bacillus typhosus, rival it in the number of suppurative sequelæ which may follow a primary infection. Its occurrence in the conjunctiva, and in the iris, the joints, bursæ and tender sheaths; its occasional demonstration, as the cause of endo- and pericarditis, pleuritis, and phlebitis, and the recent observations of cases of pure septicemia with its cultivation from the blood shows that its possibilities for metastatic complications are as numerous as are those arising from the spread of infection by direct continuity of surfaces. A general peritoneal involvement by direct extension of an unmixed gonorrheal process, though long considered among these possibilities, has heretofore remained unproven. It adds another variety to the peritonitides of monoinfection, which are rare except when of hematogenous origin. Cushing draws the following conclusions:

(1) The gonococcus is capable of causing a specific infectious disease, namely, gonorrhea and at the same time other and less specific pathological conditions.

(2) There is experimental proof that in certain small animals the

gonococcus can set up acute alterations in the peritoneum homologous with the acute septic serositides in man, but differing from those in their tendency to rapid and spontaneous healing.

(3) Hitherto there has been wanting conclusive proof that in the peritonitides attendant upon gonorrhea occurring in women, the gonococcus was solely or chiefly concerned. The inflammations had been variously regarded as mixed infections and chemical inflammations.

(4) The cases reported in this paper bring for the first time convincing evidence of the existence of a diffuse, general inflammation of the abdominal cavity caused by the gonococcus.

(5) It has been recognized that extension of the gonorrheal infection from the genital organs to the peritoneum may occur in the puerperal state; a similar sequel is shown to be possible during menstruation.

(6) Such ascending forms of gonorrhea doubtless under ordinary circumstances remain localized in the pelvis, and rarely demand surgical investigation in the acute stage.

(7) A general involvement of the peritoneum, such as occurred in the two cases given, must either be rare or unrecognized, and may depend upon some especially receptive condition of the serosa or virulence of the organism.

(8) The peritoneum is not more immune than are the peri- or endocardium to gonococcal infection, and being more exposed, suffers more commonly in females, although the relative benign course of the disease makes it a rare condition to come to the attention of the surgeon in the acute stages.

Death in Headache Powders

The daily papers have of late contained reports of death in various cities attributed to self-administration of unknown remedies. The other day a woman, in Pittsburg, died in twenty minutes after swallowing a powder for the relief of headache. This is said to have been the fifth death in that city alone, recently set down to the same cause. Such instances teach the nostrum-loving American people but slowly. The report of the physicians who have this week made an autopsy in the case of a lady of Detroit is said to show that death was hastened by the use of secret headache powders. In this connection a report published in our news department will be found of interest. It would seem but right that the ingredients of all nostrums sold in the drug-store should appear upon the package. This would protect in a measure both the druggist and the purchaser. When both are ignorant of what is being administered, great damage may often result.

Surely some legislation is called for.—*Medical Record.*

BOOK NOTICES.

THE CARE OF THE BABY. By J. P. CROZIER GRIFFITH, M.D. Philadelphia: W. B. Saunders, 925 Walnut St., 1898. Price $1.50.

Dr. Griffith has written a book of inestimable value to mothers and other care-takers of children. The task undertaken by Dr. Griffith was a most difficult one at best. To write a book on a scientific subject which can be understood by the laity, and at the same time be of value. To give instruction how to care for a child, to recognize disease, and yet to avoid that most dangerous pitfall, self-prescribing, under these conditions is a difficult feat. Dr. Griffith has accomplished this. His book must and will be of great value, will save much suffering and trouble.

Of especial value are the chapters upon clothing and feeding the baby, which even yet are so ill understood even by practising physicians. I believe the book is not only of value to mothers, but that many physicians can obtain much needed instruction from it.

AN EPITOME OF THE HISTORY OF MEDICINE. Second Edition. By ROSWELL PARK, A.M., M.D. Philadelphia, New York, Chicago: The F. A. Davis Publishing Company.

The general practitioner is all too content to administer physic. Dr. Park's book, which is well written, will give a few hours reading to the humdrum doctor, which can but elevate him, and give him needed mental recreation. We can recommend it to all physicians.

BRIEF ESSAYS ON ORTHOPEDIC SURGERY. By NEWTON M. SHAFFER, M.D., Surgeon-in-Chief to the New York Orthopedic Dispensary and Hospital, Clinical Professor of Orthopedic Surgery, University of New York City, etc. New York: D. Appleton & Co., 1899.

These essays have been published from time to time, during the past fourteen years, in various medical journals, and are now issued collectively at the request of a number of the author's friends. All of the articles refer to the "status," the "definition and scope" of orthopedic surgery, etc. The discussion of special orthopedic conditions is entirely omitted.

As Dr. Shaffer stands at the head of his specialty, his views will not only be read with interest, but they will necessarily have great weight. Throughout, one observes a consistent effort to limit the

practice of orthopedics to its proper sphere, and the statement is made that if orthopedic surgery is to remain a distinct and dignified specialty, "it must cease to appear in the *rôle* of a competitor with general surgery."

Dr. Shaffer defines orthopedic surgery as "that department of surgery which includes the prevention, the mechanical treatment, and the operative treatment of chronic or progressive deformities, *for the proper treatment of which special forms of apparatus or special mechanical dressings are necessary.*"

Cleft Palate; Treatment of Simple Fractures by Operation; Diseases of Joints; Antrectomy; Hernia; etc. By W. Arbuthnot Lane, M.S. London: The Medical Publishing Company.

This is a collection of a number of clinical lectures published from time to time.

The author has treated the various subjects in a thorough and practical manner. He is to be particularly commended for the careful consideration of the anotomical and physiological points involved and for the rational deductions he makes therefrom. The complete list of lectures is: Cleft palate; acquired deformities; mechanical or traumatic arthritis; some clinical observations on the principles involved in the surgery of fractures; treatment of simple fractures by operation; some of the consequences of wearing booth; tubercular affection of joints; some experiences in the surgical out-patient room of a children's hospital; treatment of inguinal hernia; a consideration of the principles that should guide us in the treatment of abnormal mechanical conditions of the hip-joint, and antrectomy as a treatment for chronic purulent otitis media.

Elements of Latin. For Students of Medicine and Pharmacy. By George D. Crothers, A.M., M.D., Teacher of Latin and Greek in the St. Joseph (Mo.) High School; Formerly Professor of Latin and Greek in the University of Omaha; and Hiram H. Bice, A.M., Instructor in Latin and Greek in the Boys' High School of New York City. Philadelphia, New York, Chicago: The F. A. Davis Co.

This book is designed to present within the briefest possible compass those principles of Latin etymology and construction which are essential to an intelligent use of the terminology of medicine and pharmacy. It is not intended as an introduction to the Latin language and literature, but to aid students of medicine and pharmacy to acquire a working knowledge of that language.

Some of the special features of the book are:

(1) The use of the simple sentence in the exercises.

(2) The abridged treatment of the verb.
(3) The use of the present form of the subjunctive only.
(4) Exercises on special subjects; as the eye, ear, obstetrics, surgery, etc.
(5) A chapter on prescription writing.
(6) A list of anatomical proper names and their origin, etc.

Students with a limited knowledge of Latin will find this book of very great help in acquiring an elementary knowledge of the language.

Surgical Nursing. By Bertha M. Voswinkel. Philadelphia: P. Blakiston's Son & Co., 1899.

The aim of this book, which now appears in the second edition, is to give a concise outline of surgical nursing in general, together with a list of antiseptic agents, the mode of preparation of the various materials used in antiseptic and aseptic surgery, and the application of splints and fixed dressings. The methods given for sterilizing sutures and ligatures are scarcely up to date. There is a chapter on massage and another on invalid cookery. Many of the subjects are necessarily treated in a very brief manner, but it will be found a safe and useful guide for nurses during their studies or in private work.

The Medical News Formulary for 1899. By E. Quin Thornton, M.D. In the words of the preface of this volume it is stated that "there has been no intention that it should replace individual thought on the part of the practitioner, whose diagnosis of each case must govern the character, quantity, and combination of the remedies selected."

If the practitioner, into whose hands this volume falls, remembers this, the book may do good, but certainly it is a great temptation, especially to a hurried man, to use a ready-made formula which may or may not suit the case. As a formulary the one before us is good. The habit of using such a book is bad.

The International Medical Annual Practitioner's Index for 1899. New York: E. B. Treat & Co. Price $3.

In these latter times, when specialties abound, the only possible way for the general practitioner, either of surgery or medicine, to keep abreast of the times is to have resource to some such volume as the one now under review. The journals have their epitome of medicine or surgery, are useful, and, of course, cannot be neglected, but at the end of the year to obtain such a volume as the one before us is a privilege.

To read it is to become conversant with all the good that has been written in the year.

This International Medical Annual is one of the best. The articles are well chosen, condensed, but full enough for good understanding. The separate articles are arranged in alphabetical order, which make it so much the more convenient for consultation. The entire volume is divided into several parts, each of which is arranged on the same plan. A good general index ends the book. Its moderate cost places it within the reach of every practitioner.

It is certainly an invaluable help to any physician.

SAUNDER'S MEDICAL HAND-ATLASES OF DISEASES OF THE SKIN. By PROFESSOR FRANZ MRACEK, of Vienna. Edited by HENRY M. STELWAGON, M.D. Published by W. B. Saunders, Philadelphia.

The publishers, in their note accompanying the volume, state that their sale of these atlases has far exceeded their contract.

This is not surprising, if all the members of the series are as valuable as the one under review.

The author's and editor's names are security that the text is up to date and correct. The cuts are of extreme value and compare favorably with those found in the large works on skin-diseases. The comparatively low cost of the volume, three dollars and a half, puts it within reach of the many who are debarred from the larger works.

AMERICAN POCKET MEDICAL DICTIONARY. By W. A. NEWMAN DORLAND, A.M., M.D. Published by W. B. Saunders, Philadelphia.

This little volume is compact, well bound, and the words it contains are selected, defined, and pronounced with accuracy. The plan common in the larger dictionaries of giving a list of words which are derivative of the leading word defined is convenient and instructive. The book can be easily carried in the pocket, and can be of value to hundreds needing such a book.

TO CONTRIBUTORS AND SUBSCRIBERS.

All Communications to this Magazine must be contributed to it exclusively.

To all authors of original articles appearing in this Magazine, two hundred and fifty (250) reprints will be furnished free of charge by the publishers, provided the order is distinctly stated upon the manuscript when sent to the Editorial Committee; or, a written order stating number of copies wanted may be sent with the proof-sheets. If a larger number of reprints is desired, they will be supplied at reasonable rates. These reprints will be the same size as the Magazine and bound neatly in paper covers, *when they consist of more than four pages;* if only four pages, or less, they will be furnished without covers. Type-written copy preferred.

Contributions, Letters, Exchanges, Books for review, and all Communications relating to the editorial management, should be sent to the Editorial Committee, 1501 Walnut Street, Philada.

Alterations in the proof will be charged to authors at the rate of fifty cents an hour, the amount expended by journal for such changes.

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MEDICAL MAGAZINE.

AUGUST, 1899.

OVARIAN MULTILOCULAR CYSTIC TUMOR, EXISTING FOR THIRTY-FIVE YEARS WITHOUT DESTROYING LIFE, THE WOMAN DYING FROM INFLUENZAL BRONCHITIS AT THE AGE OF SEVENTY-FOUR YEARS. REPEATED TAPPINGS.

By De Forest Willard, M.D.,

PHILADELPHIA,

AND

S. M. Wilson, M.D.,

PHILADELPHIA.

The special peculiarity of this case is its illustration of what may be taken, not as the normal course of an ordinary ovarian tumor, but of an individual case pursuing an unusual but uninterrupted course. It shows the length of time which it is possible for a woman to live with the existence of such a tumor, provided that no malignant element enters into its composition.

That it was not operated on early can be best explained by a retrospect of the condition of gynecological surgery thirty-five years ago. At that time Dr. Washington Atlee and his brother, John L., who were then the leading advocates for the removal of such tumors, were still being denounced by their professional brethren as "dangerous men" and "murderers," and were even threatened with legal prosecution. Many Philadelphia surgeons refused to consult with Atlee or to be present at his operations, denouncing the procedure as unjustifiable and criminal. A few only of the profession were willing even to sanction the operation. The elder Pancoast and the elder Gross had not recognized its utility; Agnew had only given it a trial in desperate

cases, and then practically with a uniformly fatal result; Goodell had not yet been elected to his position in the University of Pennsylvania; gynecology had not risen to a specialty; hysterectomy was practically unknown; the opening of the peritoneal cavity was looked upon as an operation almost certain to be followed by fatal peritonitis, and both abroad and in this country the procedure was making only its slow but sure progress in the careful and comparatively clean operative work of Atlee, Spencer Wells, and others. Their mortality was great, but each case operated upon was one snatched from the grave. At that time Spencer Wells had only been ten years engaged in the great work which has since made his name so famous in abdominal surgery, and Keith had done his first operation only five years before; only 122 ovariotomies had been performed in all France, and but 180 in Germany; while in Austria there had been but twelve ovariotomies, and these with eleven fatal results. But twelve years previously the French Academy of Medicine had given forth the dictum that to do this operation "one must possess an American audacity."

In the United States several years later, in 1871 ("Biography of Ephraim McDowell," 1890, p. 136), aside from the operations of Atlee and Kimball, only about 250 ovariotomies had been performed, and the list of operators does not include the names of the then prominent surgeons,—Gross, Agnew, Pancoast, Willard Parker, Sands, and others. Peasley had only done the operation twenty-eight times; Thomas, twenty-seven; Emmet, seventeen; and Sims, twelve.

It is hardly strange, therefore, that upon first seeing this case, thirty-one years ago, that I, a young man just starting out in surgical work and anxious to secure a case for ovariotomy, should not have urged with greater success an operation which then appeared so formidable. It was, moreover, at that time the common practice to tap these tumors several times at least before attempting removal. Even fourteen years later Spencer Wells ("Ovarian Tumors," p. 168) advises tapping as a preliminary measure to ovariotomy, and in the same edition advocates primary tapping in many cases as a procedure to be insisted upon, since the mortality of ovariotomy was not appreciably affected thereby.

With the lack of antiseptic methods at that time, even this simple operation was a serious one, and Kiwisch lost nine cases out of sixty-four within the first twenty-four hours after the first tapping. In England the mortality of fourteen cases out of twenty-nine tappings was reported. It is due to American ovariotomists to say that they were the first to discourage the method of primary tapping, and Peasley and others limited the operation to single cysts.

The injection of iodine following tapping had not entirely passed

out of use. This iodine method, in 1856, was claimed by Velpeau to be successful in one-half of well-selected cases. Boinet was so sanguine that he stated that one is almost always sure of a radical cure in monocysts. He claims that he had cured sixty-two out of sixty-seven cases. The tincture of iodine was sometimes used full strength, at others diluted, from one to fourteen ounces being injected. Some operators withdrew it, others permitted it to remain.

Tapping with permanent drainage had not entirely disappeared from practice.

As late as 1868, Millar (*Edinburgh Medical Journal*, 1868) and Miller (*New York Medical Journal*, May, 1869, p. 176) reported cases being cured by internal medication.

The patient, from whom the present specimen was removed at autopsy, a married woman with several children, was, when first seen, forty-three years of age. She had noticed the growth for some four years, and when seen in consultation with Dr. J. F. Wilson, the abdomen had attained the size of a pregnant woman at full term. She was a spare woman, in fair degree of health, but was suffering greatly from the distention, weight, and dyspnea. She was unwilling to accept the dangers of the operation, and was accordingly tapped, with complete relief of the symptoms for nearly two years, the fluid slowly accumulating. The operation of drawing off the fluid was repeated, as required, from time to time. Meanwhile, several attacks of peritonitis, none of which had followed the operation of tapping, had bound the sac to the abdominal peritoneal wall, and by the time that removal of the ovary had established itself as a valuable and life-saving operation, it was evident, from examination, after the fluid had been removed, that intestines, tumor walls, and wall of the abdomen had become so agglutinated that removal would be impossible; moreover, the patient experienced so much relief after her tappings that she was never ready to consent to any other form of interference. She was, therefore, tapped at intervals varying from eight to twenty months, when her discomfort became too great for endurance, and at such tappings fluid to the amount of about two or more large bucketfuls would be removed. The largest sac usually yielded ten or twelve quarts. From five to ten punctures were ordinarily made.

At the central mass calcareous degeneration had taken place alternating with hardened areas of tumor. Loops of intestine had floated up between the cysts and had become firmly united to a large area of the abdominal wall, yet at none of the operations was the bowel injured. By the use of cleanliness and care no peritonitis or inflammatory troubles ever followed the tappings, and in a few days the woman would resume her customary home work.

The fluid withdrawn was usually greenish-yellow in character, sometimes chocolate colored, and occasionally, after an attack of some debilitating illness, would be bloody. At one time, after a severe and prolonged attack of dysentery, it seemed to have almost degenerated into pus, but at the next tapping, however, the fluid was of its usual character.

She passed safely through a number of acute diseases, and though always thin in flesh, yet was able to attend to her household duties nearly to the time of her death. At the age of seventy-four years she had an attack of influenza with bronchitis, at a time when she was very largely distended with fluid (not having been tapped for eight months), and she died in February, 1899.

Autopsy.—Abdomen distended to an enormous degree,—circumference of seventy inches. Knowing that the mass was firmly adherent to the abdominal wall, the tumor was first reached from the upper portion of the abdomen. The mass was found to be so thoroughly incorporated with the abdominal wall that it was impossible even in death to separate it from the parietal peritoneum, and dissection had to be made by removing almost the entire anterior wall through the planes of muscular tissue. The parietal peritoneum had been practically abolished. Numerous sacs were opened, discharging quarts of greenish-yellow fluid. Folds of small intestine were found incorporated with the tumor at irregular points, forming a portion of its mass. One large area contained a mass of pasty, caseous material, such as is usually found in dermoid cysts, but there were present neither hair, nor bones, nor teeth. Plates of calcareous and almost bony formations throughout various portions of the tumor were evident.

The tumor had sprung originally from the left ovary. The uterus was atrophied, but not involved in the mass.

Removal during life, at least for the last twenty years, would have been impossible without taking away a large area of abdominal wall, as well as intestines.

A hasty survey of the literature on the subject has yielded the following:

In the *Richmond and Louisville Medical Journal*, 1873, is reported a case of "Ovarian Tumor of Twenty-four Years' Standing, treated by Tapping, Compress, and Bandage."

The patient was a single woman, aged forty-four years, who had suffered from an abdominal tumor for twenty-four years. For twenty years she suffered but little inconvenience, except from the excessive weight.

General health was good, but had been failing for a year. There was dyspnea, with labored heart action, and kidney action was inter-

fered with. Fifty pounds of straw-colored fluid were removed by tapping. The fluid reaccumulated, and she was again tapped ten months later, about the same quantity of a darker fluid being removed. Six weeks later, at the time of the last report, she was in a comfortable condition.

In "Ovarian Tumors," Atlee, Philadelphia, 1889, p. 181, is reported a dermoid cyst containing bone, in an unmarried lady, which had been tapped frequently during fifteen years. At the age of twenty-four the tumor was first discovered, which refilled slowly after tappings.

The tumor became adherent to the abdominal walls, and finally discharged continuously through one or two openings. The tumor contained hard, bone-like masses, very firmly adherent to the abdominal walls.

Patient became septic, and died from the continuous discharge of a pint or more of pus daily. At the post-mortem a large dermoid cyst was found, with very great adhesions to the uterus, intestines, and abdomen.

On page 188 of the same volume is also reported a dermoid cyst of forty-seven years' duration, which was seen only at post-mortem examination. There was no pedicle. The tumor had become twisted and separated, as the left ovary was absent, and there was no connection between the left side of the uterus and the tumor.

The tumor had remained quiescent for the thirty or forty years after she had passed her climacteric, owing to lack of nutrition, following this separation of the pedicle.

In Peasley's "Ovarian Tumors," edition 1872, p. 64, is the report of a case of ovarian cyst that had continued for twenty-five years, with eighty tappings, and another one in which the tumor had existed for thirty years, and another, probably a dermoid cyst, which had existed from the age of thirteen to eighty-eight. Harris has also reported a case (*American Journal of Obstetrics*, August, 1871) of fifty years' standing. Clay ("Kiwisch on Diseases of the Ovaries," appendix) gives the duration of the disease in 175 cases before the period of ovariotomy, in fifteen of which the disease had existed for more than ten years.

Although Peasley ("Ovarian Tumors," 1872, pp. 233 and 307) states that these tumors, without surgical interference, usually terminate fatally within four years after the discovery of the cyst, yet he cites cases of patients whose lives have been prolonged for several years by palliative tappings: Duration, from five to six years, fifteen cases; from six to seven years, five cases; from seven to eight years, four cases; from eight to nine years, one case; from nine to ten years, three cases; for more than ten years, fifteen cases.

In spite of these statistics he argues that an ovarian cyst "not submitted to surgical treatment is as certainly fatal as any malignant disease, and after it has attained to a large size as rapidly so. The dermoid cyst and the oligocyst are not less certainly fatal than the monocyst, but only require a somewhat longer time to exhaust the vital force. The exceptions to this last statement are too few to be taken into account when we come to decide upon the treatment appropriate to ovarian cysts."

The interest in the specimen which we present to-night to the Museum of the College consists chiefly in its duration of growth through thirty-five years and the benignity of its course under merely palliative treatment. At the present day it would, of course, have been removed in its early stage, and would not have been permitted to have so thoroughly incorporated itself to a large area of abdominal wall.

FOUNDING OF A HOSPITAL FOR CONSUMPTIVES.

By James Tyson, M.D.,

PHILADELPHIA,

Professor of Medicine, University of Pennsylvania.

The little hospital which, in its enlarged state, you have been invited to examine was opened about seven years ago, in January, 1892, in a rented building at the corner of Twenty-second and Pine Streets. Several thousand dollars were expended upon it to adapt it for its new purpose. Thus provision was made for the accommodation of fourteen patients. Simultaneously a dispensary or out-patient department was started for the treatment of cases who could walk to the hospital. The building was, however, located in a crowded neighborhood, and, after a little more than three years' occupation, it was decided to remove to a more suitable locality, and, if possible, to a spot which could be purchased and controlled. Accordingly, the lot and house we now occupy were bought for $28,500, of which $7000 were paid, while the balance remains on mortgage. The removal took place in July, 1895. The building was not originally constructed for hospital purposes, but was exceedingly well built, and was easily altered at small expense to accommodate fourteen patients. The lot was regarded as exceptionally suitable. Occupying high and commanding ground, bounded on three sides by streets and unobstructed by buildings, its eastern outlook extends over the large expanse of

territory occupied by the tracks and yard of the Pennsylvania Railroad Company and the Schuylkill River beyond. Thus open and unobstructed, we are still in the heart of a great city, easily accessible by street-car lines to more distant points. Our resources were at first subscriptions and money hard earned by solicitation and various entertainments, such as only the patience and energy of devoted women can suggest and carry out. In 1893 the State came to our aid, appropriating $10,000, or $5000 a year for two years, for current expenses. This was repeated in 1895 and again in 1897. The legislature, which adjourned April 20, passed a bill granting us the same sum for the next two years, which has just received the Governor's signature. In view of the enlargement, by our own efforts, of the hospital to nearly three times its original capacity, say forty beds, we petitioned the State Board of Charities to increase the annual appropriation for the next two years to $20,000, or $10,000 a year, and the board so recommended, but in consequence of the reduced state of revenue, the Assembly did not feel justified in granting the increase asked for.

As to the enlargement of the hospital referred to, which we deem of sufficient importance to justify the invitation to our friends to inspect, about one year ago it occurred to some of us that, if the hospital was ever to take the position it was intended to assume in the alleviation of the sufferings of the victims of consumption, and as far as possible their cure, it was necessary at once to do something which would help us to this end. A couple of years ago plans were made for a new building, much more pretentious and correspondingly costly, which were subsequently abandoned. It was then ascertained that, by the expenditure of so small a sum as $4500, two new wards could be constructed, each to accommodate fifteen patients, and below these a small sun-parlor, two prescribing rooms, a waiting room, apothecary-shop, and small wash-house. Later a generous friend contributed $400, to be used only for a sun-parlor extension to each ward. The sum of $4500 does not include the furnishing or heating apparatus. The former has been provided, and the latter is still founded on faith, in the belief that, by the time it is needed, the means for its construction will be forthcoming.

It may appear rather late at this stage to bring forward the reasons for founding a hospital for the treatment of consumption in Philadelphia. But as the propriety of such a step has been questioned, it seems worth while, at least, to refresh our memories of such reasons. In the first place, there is the same reason which holds in the case of any hospital,—viz., there are always persons who are either unable to provide treatment in their own homes or can be better treated in a hospital. To this must be added the important fact that, of late years,

the consumptive has become a very unpopular patient in the general hospitals of the city. Indeed, it is a fact that many of them refuse to receive him at all, while those which do receive a limited number provide no special care or treatment such as is demanded for this disease, and is provided alone in special hospitals. But more than all this is the fact that it has been demonstrated beyond doubt, and is now universally acknowledged, that the institution treatment of consumption in general is far more successful than the home treatment, and that since its adoption the number of cases per thousand of population has diminished. And last of all, it appears that it does not much matter where the institution is, whether in town or country, the effect is just the same. The last statement might be considered as disposing of the question, why do you want a hospital in the city, when the country is so much more salubrious and where high and otherwise healthful locations are obtainable with conditions more favorable to its cure, and that in accordance with this sanitaria are being established in various parts of Germany, England, and Scotland, and to a small extent in this country? But there is another answer to this. We need, too, a hospital in the city, where the consumptives are, as well as in the country, where they are not to be found in any number; in the city, where physicians of skill and experience find it possible to give their time and attention to a study of the disease, and where dispensaries can be established for the treatment of those who cannot or will not go to a hospital. I have not a word to say against sanitaria in the country. They are needed, and I wish we had more of them. I wish there was one properly located in the State of Pennsylvania, and I hope it will not be long before the State will feel at liberty to aid in the establishment of such a sanitarium, for it is too costly an undertaking for an individual. The ideal plan would be to have a city hospital and a sanitarium associated. In the former the patients could be gathered, and, after a preliminary study, suitable cases could be sent to the sanitarium. But in the mean time there is no sanitarium in Pennsylvania, while if there were two, and even three, they could not accommodate the consumptives who ought to be in them. In fact, no consumptive ought to be treated at his home, if it were possible to treat him in an institution. In the mean time 1135 victims have perished of this disease in the city of Philadelphia between the 1st of January and the 6th of May, of this year, an average of sixty-three each week. Think of it for one moment. This is not for a few weeks or a few months, but week in and week out, from year to year, with the doors of the general hospitals closed against them. The total number of persons who died of consumption in Philadelphia in 1896 was 2514; in 1897, 2388; in 1898, 2590. The aggregate of deaths in the last epidemic of typhoid

fever falls far below this. And yet, except for our own little hospital, with its present number of forty beds, the Home for Consumptives, at Chestnut Hill, with sixty beds, and the House of Mercy, on Spruce Street, twelve beds, there is no hospital for consumption in this city of a million and a quarter of people. In the city of London alone there are five hospitals for the treatment of diseases of the chest, and although but one of these is for consumption exclusively, it may be said of all that consumption is the chief purpose of treatment. The description of the Brompton Hospital for Consumption and Diseases of the Chest reads like a dream of fairyland, so beautiful and extensive are its grounds, so complete and perfect are its appointments. It alone accommodates 321 patients, and has an out-door service of from thirty to eighty-seven patients in an afternoon. The same may be said as to the appointments and surroundings of the City of London Hospital for Diseases of the Chest, Victoria Park, which treated 1073 persons in its wards in 1888. The Royal Hospital for Diseases of the Chest treated 305 patients in 1889; the Infirmary for Consumption and Diseases of the Chest treated 2000, including, presumably, in-patients and out-patients. The North London Hospital for Consumption treated 320 patients in 1888. In 1890 there were eighteen hospitals which are, in a certain sense, special hospitals for the treatment of tuberculous diseases in Great Britain, in which are treated between 6000 and 7000 patients annually. It seems almost incredible that such indifference should exist in relation to a disease which extends its hydra head into so many families that there scarcely exists one in which it has not set its mark on one or more victims. May we not hope that this day will mark the beginning of a new era in the interest of the people of Philadelphia in a disease which concerns them so vitally, and which there is every reason to believe may be ultimately stamped out by the agency of hospitals and sanitaria.

Just here I want to say a word to our neighbors, those who reside in the vicinity of the hospital. It has been one drawback to the satisfaction it has given us in developing the little work thus far advanced that we were not welcomed by our good neighbors, though there is reason to believe there has been some change of feeling, since we are beginning to receive evidences of sympathy and interest. I want, however, to convince you that so far from being a menace and source of danger to the neighborhood, we are an advantage and a sanitation. In the first place, a latter-day hospital is a focus of cleanliness, whence its influence extends in all directions. Disinfection and absolute chemical purity are aimed at, and secured more thoroughly at a hospital than in any private home. So that a hospital *per se* cannot be harmful. Some increased obloquy attaches to a hospital for consumption solely be-

cause the laity has imbibed erroneous notions as to the contagious nature of the disease. It is true, at the present day we regard consumption as communicable through its bacillus, but its contagion is so easily controlled that we have simply to know that it exists to be able to destroy it, with all its harmful possibilities. Indeed, it is more than likely that the gradual falling off in the number of cases which has been observed for several years past has been the result of acting on this knowledge. It seems probable, moreover, as already intimated, that if measures which are known to destroy bacilli can be carried out successfully, consumption will ultimately be stamped out. Now it is the hospital which is the living exemplification of this doctrine, emphasizing and inculcating it by its practice, and by insisting on its observance on the part of patients who impart it to their friends, and these to other friends. Expectoration, which is the sole medium of dissemination of the bacillus of consumption, is not permitted anywhere in-doors or out-doors, except under conditions which will permit the complete destruction of all that is harmful in it. A very interesting and comforting circumstance has been published in connection with the Sanitarium of Falkenstein, in Germany, established in 1876. Dr. Nahm, who undertook the investigation, ascertained that for the twenty years previous to the establishment of the sanitarium—that is, from 1856 to 1876—the proportion of deaths from consumption in the village was 18.9 per cent., and from 1877 to 1894 was but 11.9 per cent.; so that the effect of the presence of the sanitarium at Falkenstein was to reduce the mortality of consumption *in the village, outside of the sanitarium,* 7 per cent. in eighteen years. Let us hope that by the time the Rush Hospital has been twenty years at Thirty-third and Lancaster Avenue, the percentage of deaths from consumption in that part of West Philadelphia will be similarly reduced.

In conclusion, allow me to state briefly the needs of the hospital, if it is to carry out successfully its laudable purpose. For the present we do not desire any enlargement of our accommodations for patients. For a few years, at least, we should devote ourselves to obtaining the means for a proper support of the beds we have. To this end we need first of all an enlarged heating apparatus. The heating apparatus of the original building is, of course, inadequate for the additional wards, and it is fortunate that they have been finished at a season of the year when we can occupy them without artificial heat. Our energies during the next few months must, therefore, first be directed to this end. Again, we need money to pay off the mortgage of $21,500 on the present property, and while we do not desire to increase the size of our hospital at present, we ought, in view of future possibilities, to have more ground. To the west of us is a lot belonging to the Pennsyl-

vania Railroad Company, which has been offered to us for $10,000. Its purchase at present is out of the question, unless some kind friends come forward with their purses to help us. It is not too much to hope that some day the entire piece of ground, bounded as it is by streets on every side and therefore specially adapted to hospital purposes, shall come into our possession. I have no doubt our good friend and neighbor, Mr. Daly, who has been more than kind to us on many occasions, will be willing to sell us his part for a reasonable consideration when the time comes. Finally, we need money for endowment and current expenses, and I hope that, after what has been said and after you have inspected the modest beginning of a noble endeavor, you may go away filled with the desire to help us, each in the way he best knows how, be it modestly or ambitiously, towards the consummation of a purpose which appeals to the humanities more widely and more strongly than any charity to which public attention is now being directed.

PNEUMOMASSAGE OF THE EXTERNAL AUDITORY CANAL COMPARED WITH INFLATION OF THE TYMPANUM.[1]

By Charles H. Burnett, M.D.,

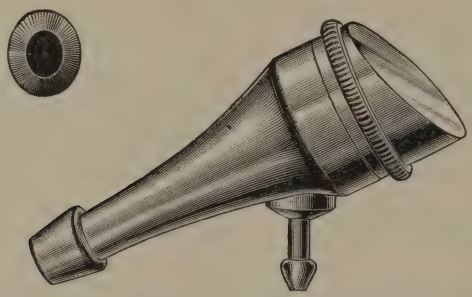
PHILADELPHIA.

Pneumomassage, alternate condensation and rarefaction of the air in the external auditory canal, may be effected in two ways,—viz., either by means of Siegle's pneumatic ear-speculum, operated by the surgeon's mouth, or by means of a small air-pump or syringe, run by a miniature electromotor, as in the very useful Chevalier Jackson instrument.

I have used for more than twenty years a French make of a Siegle pneumatic speculum, formed of a Gruber speculum, made of metal, to which is fitted the glazed lid that transforms it into the Siegle pneumatic speculum. Its extreme length is five and a half centimetres, and its diameters, at its meatal end, are six millimetres vertically, and four millimetres transversely. I have had a new one made recently, nickel-plated within and without, which gives a better reflecting surface than that possessed by the ordinary black hard rubber Siegle instrument

[1] Read by title at the meeting of the American Otological Society, New London, Conn., July 18, 1899.

found in the shops. The two small openings on its inner wall, at the point connecting it with the air-tube, act like a sieve, preventing the drawing up of particles of cerumen or dirt into the operator's mouth: another advantage over the ordinary Siegle instrument. The attachment for the air-tube is in the long vertical axis favoring a downward curve of the rubber tubing, and preventing a kinking of this tubing that sometimes occurs in old forms of the Siegle instrument. The chief advantage, however, lies in the shape of the meatal end of the speculum. The outside of this end is made to rapidly widen for a distance of a centimetre from the end from nothing to a diameter of eleven millimetres vertically and ten millimetres transversely, thus giving a graduated end fitting hermetically into nearly any adult meatus without the addition of rubber packing or the replacing of another speculum, with a smaller or larger diameter, as in the usual forms of hard rubber Siegle specula. (See Fig.) With the Siegle instrument a more powerful rarefaction can be applied to the canal than with the Jackson instru-



Burnett's modification of Siegle's pneumatic aural speculum. Natural size.

ment, and the membrana tympani thus drawn outward and traction made upon the tensor tympani, and *kept up* as desired, as with no other ear-instrument at our command. In fact, the chief therapeutic usefulness of the Siegle instrument lies in its ability to produce and maintain rarefaction of the air in the auditory canal and consequent *pneumatic traction* upon the membrana tympani and its tensor. If it is desired, the circulation in the manubrial plexus of vessels, in the vessels of the membrana tympani, and even in that of the drum-cavity, can be quickened by rarefaction of the air in the canal thus evoked, much more rapidly than with the Jackson air-pump.

Also a very powerful condensation of the air in the auditory canal can be created by the Siegle instrument, if desired. When the motive force lies in the surgeon's mouth, in the employment of this instrument, it has a wider and a more quickly varying range of application than the Jackson instrument. I would say, parenthetically, that I have

recently treated a case of hardness of hearing and tinnitus, in which the latter symptom was relieved by condensation rather than by rarefaction of air in the auditory canal.

With the Jackson instrument, in which the Siegle pneumatic speculum is operated by the air-pump, very gentle and excellent, *periodic* pneumomassage can be applied to the membrana tympani and malleus, and mediately to the incus and stapes. Little or no blushing of the manubrial plexus takes place under the use of this instrument, if applied for only from thirty to forty seconds, and at a rate of two strokes of the piston a second. Good effects are obtainable in thirty seconds, as a rule, while its application for sixty seconds is uncomfortable or even painful to the patient.

Either of the above-mentioned forms of rarefaction and condensation of the air in the external ear can be applied to *one ear at a time*, a great advantage over all forms of tympanic inflation, excepting catheterization. In the employment of the various forms of gentle pneumomassage of the external auditory canal, the force is exercised directly upon the membrana tympani only. No sound is conveyed to the ear in this procedure, and therefore the auditory apparatus escapes the great dangers existing in all forms of phonomassage or vibromassage, which sooner or later impair the auditory nerve. In fact, they produce a form of "boiler-maker's deafness."

There are several forms of inflation of the tympana,—viz., the so-called air-douche, catheterization, Valsalvan autoinflation, and inflation by means of a nebulizer. All of these, excepting catheterization, are applied, whether or no, to both ears; nebulizer inflation has the advantage of conveying medicated air to the tympana. Valsalvan autoinflation has the very great disadvantage of producing congestion of the head and auditory apparatus in addition to other disadvantages accruing to the ears by its use. All forms of inflation possess the great disadvantage of being liable to force pathogenic matter from the naso-pharynx into the naturally aseptic middle ear. This is especially true of the catheter, as in its passage through the nares and naso-pharynx it takes up septic matter from these cavities and conveys it at least to the mouth of the Eustachian tube, or takes up at the latter point septic matter and furthers its advance up the tube and to the drum-cavity as soon as the air-bag is blown into the catheter by the surgeon's hand. All forms of inflation of the drum-cavity are more or less septic procedures, but catheterization is most so. It is fortunate that it is applied to only one Eustachian tube at a time. Nebulizer inflation is the least harmful, as it is very gentle, and is supposed always to convey an aseptic vapor to the Eustachian tube and middle ear, when it inflates the latter.

Inflation of the tympana is rarely, if ever, needed: certainly not nearly as often as is generally supposed, because entire want of air in the drum-cavity is among the rarest of occurrences, on account of the so-called "safety-tube," formed by the undersurface of the thick, sharply crooked cartilaginous roof of the Eustachian tube, as pointed out thirty years ago, by Rüdinger, of Munich. This "safety tube," in the Eustachian tube, prevents the occurrence of a vacuum in the drum-cavity, and renders any form of inflation usually unnecessary. When inflation of the tympana is performed, it is more or less of a sudden shock to the middle ear, and especially to the nerve of hearing. The sudden entrance of air, *via* the Eustachian tube, into the tympanic cavity tends to force the membrana tympani and malleus outward, and the incus, stapes, and membrane of the round window inward. Now such a procedure is surely contraindicated when the stapes is already unduly impacted in the oval window, as in catarrhal processes in the drum-cavity. A force thus exerted upon the stapes and the round window membrane at the same moment is especially prejudicial to the welfare of the auditory nerve in the labyrinth, because the recoil of the labyrinth fluid from the impaction of the stapes is prevented by the simultaneous inward pressure of the membrane of the round window by the inflation, and the usual yielding and compensatory function of this round window membrane, in impaction of the stapes, is temporarily abrogated. Direct violence by compression may be thus offered to the labyrinth of both ears, whether normal or diseased, and it can be readily understood why inflation is usually disagreeable and sometimes painful to the patient, and also why tinnitus and vertigo are often made worse by it instead of being relieved.

Pneumatic Traction on the Tensor Tympani indicated in Chronic Catarrh of the Middle Ear.—The tensor tympani tendon is covered by a fibrous sheath, considered by Helmholtz to be a continuation of the periosteum lining the muscular canal in the bony portion of the Eustachian tube, from which it arises.

We can thus explain the early participation of this muscle and tendon in catarrhal and arthritic processes in the naso-pharynx, Eustachian tube, and middle ear. Therefore, we can understand why one of the earliest symptoms of chronic catarrhal otitis media is contraction of this muscle and its tendon, with consequent retraction of the membrana tympani. With such retraction of the membrana tympani there are usually associated varying degrees of tinnitus aurium and impaired hearing, at first directly traceable, largely, if not entirely, to the retraction of the membrana and ossicles. Later on, if this retraction is not overcome, there are vascular changes in the ossicles and

tympanic walls, with ankylosis of the ossicles and firmer impaction of the stapes in the oval window.

In such cases, in addition to treatment of the naso-pharynx, it has been customary to inflate the tympana in various ways. But no form of inflation ever improves the hearing, relieves the tinnitus, and gives a sensation of openness to the ear, equally as well, as agreeably, or as promptly as maintained rarefaction, or gentle, alternate rarefaction and condensation of the air in the external auditory canal by means of Siegle's pneumatic speculum. Patients always dislike all forms of inflation of the tympana, and as all kinds of inflation of the drum-cavities are more or less septic, they are positively contraindicated, if the naso-pharynx contains morbid secretions. Furthermore, all forms of inflation, excepting catheterization of the Eustachian tube, are applied to both ears, whereas Siegle's pneumatic massage is applied to only one ear, as required.

Inflation is contraindicated in Acute Rhinitis with Acute Catarrh of the Middle Ear.—If the conditions in our own naso-pharynges and middle ears are closely observed when we have coryza, we shall observe that, as secretion increases in the naso-pharynx (but not before), the Eustachian tube ceases to open at each act of swallowing as it does in a normal state. The ear may feel more or less stopped, and now and then there may be slight pain running into it from the posterior nares. If in these early stages the naso-pharynx, nares and Eustachian tube receive no local treatment or only a mild one with a bland, oleaginous spray, we shall perceive that, as secretion in the nares and naso-pharynx diminishes, in the course of from three to six days the Eustachian tube will open spontaneously (or with an act of swallowing), and the ear will feel clear once more. This stoppage of the Eustachian tube in the early secretory stages of an acute coryza is beneficial, since it is Nature's seal set against the entrance of pathogenic germs from the naso-pharynx into the normally aseptic middle ear. If this seal is broken, either by forcible blowing of the nose, Valsalvan autoinflation, or any form of inflation by the surgeon, it is done to the injury of the patient, as pathogenic germs are very likely to be forced by such manipulations from the naso-pharynx into the middle ear, and an acute purulent inflammation of the drum-cavity set up.

In mild acute and subacute catarrh of the middle ear a gentle pneumatic traction of the membrana tympani, by means of the Siegle pneumatic speculum, usually relieves the stopped feeling, tinnitus, and dulness of hearing instantly and painlessly, and without any shock to the structures on the inner wall of the drum-cavity, and thence to the labyrinth. The isolation of the retracted ossicles is thus restored, and

the ear performs its normal function once more. It is, therefore, indicated in such conditions of the ear in preference to any form of inflation.

Conclusions.—Pneumomassage applied to the external auditory canal and membrana tympani, and mediately to the ossicles of hearing, in both acute and chronic catarrhal processes in the middle ear, is more efficient, less of a shock to the auditory nerve, more agreeable to the patient than inflation, and entirely free from sepsis, whereas inflation is not. Inflation of the tympana, being very rarely necessary as a means of forcing air into the middle ears, the latter being very seldom in need of it, it is fair to conclude that inflation of the tympana, as it must be applied to both ears, whether desired or not, is usually *contra-indicated* in aural diseases.

On the other hand, as drawing the membrana tympani and malleus outward, and traction on the tensor tympani and restoration of the normal isolation of the auditory ossicles are desired, without any shock to the structures upon the inner wall of the drum-cavity, and as this can be so safely effected by pneumatic rarefaction of the air in the auditory canal, pneumomassage is indicated for this purpose. In fact, some form of pneumomassage of the external ear has almost entirely superseded the use of all forms of inflation of the tympanum in my hands, during the past ten years.

Enteroliths formed by Drugs.

Dr. Puis y sans (*Criterio Catholico en las Cieneas Medicas*) prescribed salicylate of magnesia and benzo-naphthol to be taken in a cachette of the smallest possible size. The patient took the dose, and next day Dr. Puis received a whitish body, hard as stone, resembling an enterolith, which had been found in the motions. It consisted entirely of the drugs administered, consolidated into a stony mass. Dr. Rovira (D. Juan) saw a similar result after the administration of carbonate of magnesia and salol, in the same form, and Dr. Lloret had the same result after salicylate of bismuth and benzo-naphthol had been given in a cachette. These cases show that the physical and chemical compatibility of drugs administered together should be known.—*Medical and Surgical Review of Reviews.*

A VISIT TO THE LOOMIS SANITARIUM FOR CONSUMPTIVES.[1]

By Guy Hinsdale, A.M., M.D.,

PHILADELPHIA,

President of the Pennsylvania Society for the Prevention of Tuberculosis,

AND

Howard S. Anders, A.M., M.D.,

PHILADELPHIA,

Lecturer and Clinical Instructor on Physical Diagnosis, Medico-Chirurgical College; Visiting Physician to the Samaritan Hospital.

Topography; Climate; Origin of the Institution; Equipment and Organization (by Dr. Hinsdale).—In our day no one who discovers that he has pulmonary tuberculosis, and who is able to use every means to check its advance, is content to remain in the large cities near the Atlantic coast; nor does every one need go to the Rocky Mountains or to the Western plains. Many find in New York and Pennsylvania the desirable elevation, the exhilarating forest air, the medical supervision, the food, and all the accessories of remedial treatment. The poor as well as the rich are beginning to find these measures within their reach; and it is to the credit of philanthropic men and women in New York that within the borders of that State several noble charities are now maintained for the relief of consumptives, who a few years ago would have found themselves drifting hopelessly towards an abyss without one outstretched arm to save.

The State of New York has wisely rescued from encroachment a tract of about one million acres in the Adirondack Mountains. In this region the different settlements and hotel sites have an elevation of between 1200 and 1800 feet. There is a region in New York State, lying midway between the Adirondacks, Lake Ontario, and New York City, where a broad extent of high ground is found. It occupies the summit of the watersheds of the Hudson, the Delaware, and the Susquehanna Rivers. Sullivan County occupies this commanding position. Dr. Alfred L. Loomis selected the town of Liberty for the site of the sanitarium for consumptives, which now bears his name. The

[1] A report to the Pennsylvania Society for the Prevention of Tuberculosis, June 14, 1899.

town itself affords elevations of from 2200 to 2400 feet, and the site selected for the institution is beautifully situated at about 2300 feet, protected on the north and northwest; and from the grounds one can see forty miles down the valley of the Delaware. There are rolling mountains in the distance, to the westward, and to the northeast the southern spurs of the Catskill and Mongaup Mountains. There are no lakes of any considerable size, and no swamps and no stagnant water-courses. There are clear running streams, with trout; rolling country, with fine pasturage and extensive dairy farms; the country is beautiful rather than wild, and maintains a moderately prosperous population. Liberty is 117 miles from New York, and is reached by the Ontario and Western Railway, and is coming into prominence as a resort for pulmonary disease. The neighboring towns of Liberty Falls, Fallsburg, Woodburne, Neversink, Monticello, and Hurleyville, although not quite so high as Liberty, share in great measure its natural advantages.

The absence of bodies of water and the rapid drainage give to the air a dryness not found in the lake region or the seaboard. The soil in the lower levels is a loam with a moderate amount of clay, but on the hillsides the soil is much more porous. The range of temperature is great.

Liberty has two seasons,—summer and winter. The transition from winter to summer is rapid. At our visit, on May 11, the foliage was well developed on all the deciduous trees. Apples were in blossom; dogwood was in full flower, and the ferns and other undergrowth were covering the country-side where only six weeks previous great expanses of snow had lain. The sleighing was continuous for five months, and when once snow has fallen, in November, it remains dry and hard until summer is near at hand.

The exposure of the sanitarium to the south, southeast, and southwest makes the out-of-door life possible in all seasons, and this open air method is the sheet-anchor of the treatment.

The great need of better provision for consumptives led Dr. Alfred L. Loomis, Mrs. Richard Irvin, Mrs. George Lewis, and other charitably disposed people in New York, to locate and build the sanitarium. The undertaking had its origin in 1894, and in July, 1896, the institution was opened. Mr. J. Pierpont Morgan gave $65,000 towards the erection of the main building, and has been a strong friend ever since, contributing in all about $130,000 for the work of the institution. Besides those already mentioned, the principal donors have been Mrs. W. D. Sloane, Miss Emily A. Watson, Mrs. M. J. Walker, Mrs. Clarence M. Hyde, Mrs. A. D. Kellogg, Mrs. Robert Winthrop, and Mrs. A. L. Loomis.

Bird's-eye view of the Loomis sanitarium, looking south.

Loomis sanitarium ; main building.

Cottage at Loomis sanitarium.

Cottage at Loomis sanitarium.

Dr. Stubbert's residence.

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The casino.

The buildings number twelve, so that they have convenient access to the administration building, in which are the medical offices, the laboratories, and the dining hall. Patients who, from sickness or accident, are unable to go from their cottages to the dining hall, are usually cared for in the infirmary, a separate building, where special nursing is provided. The main building and infirmary have two stories, but most of the cottages have only one. They are constructed mainly of stone, with a liberal supply of roof and shingle, are all supplied with heat from hot water and with electric light. The buildings are all substantially constructed, scrupulously clean, and, although furnished throughout on hygienic lines, they are attractive and home-like.

The house of the physician-in-chief is at an elevation above all the other buildings, and commands an inspiring view of the adjoining counties.

The funds for the support of the institution are derived from the payments from patients supplemented by the annual subscriptions of friends of the institution. For the year ending October 31, 1898, the expense of maintenance, etc., was over $60,000, of which $42,000 was paid by patients. It was found that in the absence of an endowment fund (the invested funds yielding in that year only $225) the charges must be raised beyond the amount originally intended, and experience has shown that the present schedule of rates, twelve to twenty-five dollars a week, enables the institution to maintain itself with its present equipment. The financial question has been a great problem, and has made great demands on the managers.

Regarding the management, it may be said here that the institution is in the hands of the Society of the Loomis Sanitarium, composed of thirty-five men and women, well known in New York; four of these are physicians. The board of directors number twenty, and are all women. The medical board comprise the physician in charge and twelve well-known physicians from New York City. The other medical officers are a house physician, who holds a permanent position, and, like the physician in charge, is a salaried officer. The assistant house physician is appointed for six months, serving without pay, as do internes in hospitals. There is also a bacteriologist.

Nurses' Training School.—There are eighteen nurses, in charge of a superintendent and her assistant. The school was started in February, 1898, and applications are constant from graduates of other training schools so as to acquire this special training. Since the formation of the school the nurses have earned nearly $2000 for the institution, and a portion of this has been set aside as a permanent fund for the graduation of pupils. A superintendent and a steward from one of the

best hotels in New York relieve the physicians of all care as to their respective duties.

Physicians in twelve of the larger cities in the United States examine applicants for admission free of charge, and only incipient cases will be admitted.

Some Object Lessons and Suggestions (by Dr. Anders).—Interesting and edifying, scientific and practical as were the papers read at the recent annual meeting (May 9 to 11) of the American Climatological Association, in New York, it was a truly inspiring and vivifying pleasure and satisfaction to see such an admirable climatic and hygienic clinic for the tuberculous as this visit to the Loomis Sanitarium demonstrated,—thanks to the kind courtesies of the officers, physicians, and nurses, as well as the New York, Ontario and Western Railroad officials.

As noted above, only those cases are desired "who are in the *early stage* of consumption, and to whom a residence of a number of months in the sanitarium promises either a complete cure, or such an improved condition that they can return to their homes, and be able to carry on their work."

The sun-browned, contented, and cheery countenances, the firm steps and steady gait, the heartily eaten meals, and evident enjoyment of repose and recreation that characterized many of the patients we saw, and who had sojourned for a month or more, betokened the beneficial results that a pure, light, dry, sunny, and forest-favored atmosphere and soil, seasonal and meteorologic clemencies, wholesome and abundant spring water and food, social amenities, home-like environment, mental diversion, exhilarating out-door sports, judicious exercise, rational and comfortable clothing, inspiring scenery, and admirable medical supervision and treatment can do for the curable incipient consumptive.

Though mentioned all but last, not least in importance is the medical control, administration, direction, and guidance under the headship of Dr. Stubbert, physician-in-charge, without whose scientific and executive ability much that is essential to good results, particularly in the adaptation of systematic but not rigid rules, and unremitting care to the needs and indications of each individual case, would not be obtained.

The patients' quarters in the more than half-dozen cottages and the infirmary are appropriately located and tastefully furnished. They are airy, well lighted, and with scrupulously clean ceilings, walls, and floors. A small rug or two may be on the floor of a room here and there, besides the large one in the central larger but cosey and sunny reception and reading hall, from which the corridors extend, and all

of which look out upon the beautiful, gently sloping plateau in front, and beyond across the valley, towards the hills of the Pocono region, forty miles away, in a south-southwesterly direction.

The brass and white enamelled beds and wash-stands, wicker chairs, rockers, and settees, and clean, white muslin hangings at windows and transoms and on screens, are esthetically as well as aseptically suggestive of the actinic, pure, and reviving air without.

It is scarcely relevant to this impressionistic sketch to outline, even, the daily routine of the life of a consumptive here. These young men and women just live to eat, sleep, and sit or exercise out of doors as much as possible, regardless of the season or the weather.

Nine of the eighteen nurses in the training school have been patients. Three of these are entirely cured. The nurses are educated and trained for intelligent and effective service in the sanitarium, and, secondarily, to fit them for the private nursing of cases of tuberculosis. Special attention is given in the matter of dietetics, calisthenics, massage, bathing, electricity, urinalysis, antiseptics, ventilation, prevention of bedsores, cupping, the X-ray, etc. A post-graduate course of six months (the regular course is two years) provides for extra instruction in examination of sputa, microscopy, histories, making abstracts, stenography, and typewriting, so that a woman may be especially fitted for the duties of a physician's office nurse.

Of course, particular care is required of all in regard to the sputa. The pasteboard cups are all deposited,—usually before meal-time,—either by patients or nurses, in one central closet in the administration building, whence they are taken to be burned, and fresh, disinfected cups substituted. As an example of another sanitary precaution, there is the prohibition against dogs or any other pets in the sanitarium.

It need hardly be urged that the therapeutic accessories are ample, modern, and skilfully arranged and used. The throat-room, on the second floor of the administration building, seems perfectly adapted for the successful treatment of laryngeal tuberculosis. Nearly 50 per cent. of the cases of tuberculous ulceration of the throat have been cured,—a much better showing than at the various health resorts in Colorado. More than one-half of them also gained in weight.

Although it is the purpose of the sanitarium to admit only incipient or moderately advanced cases, "the rule cannot be so absolutely drawn as to exclude every far-advanced case." Patients gain on the average two pounds a week in weight. Twenty per cent. of the cases of all classes discharged are cured. Ten per cent. more are cured who remain over three months. About 75 per cent. of the patients gain in weight. Loss of or diminution in the numbers of bacilli and of cough,

and improvement in the physical signs, are also witnessed in a considerable percentage of the cases.

Hot air inhalations have been very effectual in reducing the cough and expectoration in three-fourths of the cases. Associated with the climatic and hygienic treatment, the use of United States government serum in forty-eight cases has resulted in the cure of 27 per cent. and the improvement of about 45 per cent., with a respective loss or decrease of the bacilli.

Ichthyol in enteric coated pills has been used with very satisfactory results, especially in those cases in which the gastro-intestinal and genito-urinary tracts were involved also.

In the infirmary there is one small room set aside for what is known as the pneumochemic treatment of tuberculosis. An hydraulic pump in the cellar compresses air which is piped to a room on the second floor. The air is conveyed to flasks containing the different medicines required, which are then thrown out into the room in the form of vapor; the room is tightly closed, and the patients are required to sit there for a number of hours at a time. This treatment promises some good results.

The best diagnostic facilities of the times in X-ray work are in service. We were privileged in viewing a fluoroscope shadow produced by an empyema of the right pleural sac in a boy.

In conclusion, it may be to the reader, as to the writer, self-evident that this imperfect narration of what goes on in a well-equipped and ideally situated sanitarium for consumptives, nevertheless points strongly to the imminent needs for scores and scores of similar institutions. The war against tuberculosis is on, as he who runs may read. Organized activity in Europe is advancing rapidly in the adoption of aggressive measures for the stamping out of the disease; and in the matter of sanatoria we are behindhand, though the outlook for widespread interest and efforts in the same direction is increasingly hopeful. We are now ready to apprehend the reason for the movement for sanatoria in an appreciation of the results already achieved. We need not only sanitaria and sanatoria, but *urgently*, too, hospitals for the thousands of consumptive poor in the better-aired, cleaner, and higher places of the suburbs of our great cities, especially for the despised and neglected advanced cases. The national, State, and municipal institutions for the consumptives ought to be, must be, and will be, sooner or later; they are sanitary necessities. They must be recognized as within the pale of governmental duty as well as of philanthropic opportunity.

CASE OF OBSTRUCTION AND PERFORATION OF THE BOWEL FROM A GALL-STONE.

By C. S. Martin, M.D.,

ALLENTOWN, PA.

M. F. R., aged 52 years; male; white; occupation, teacher. Previous history negative; habits very abstemious and sedentary. The case presented the following history:

On Saturday evening, December 3, 1898, the patient partook of a hearty lunch of indigestible food, and in a few hours suffered considerable distress. He complained of a sense of weight and pressure over the stomach, considerable nausea and slight vomiting. This continued until Sunday evening, the nausea and distress abating. On Monday morning he had a perfectly normal stool and under ordinary treatment showed great improvement. Early on Tuesday morning he was seized with intense cramp-like pains centred about the umbilicus. There were slight nausea and belching, temperature normal, pulse strong, but slightly increased in number of pulsations. The abdomen was tense and tympanitic. A hypodermic injection of one-quarter of a grain of morphine was administered which afforded relief, hot applications were applied to the abdomen, and an enema of soap and water given. As the enema did not produce any results, one-quarter of a grain of calomel was given every hour for six hours without producing the desired result. The stomach was slightly irritable and the belching continued. On Wednesday the patient presented about the same condition as on the previous day. The abdomen was, however, more distended and tympanitic. The enemata were continued, producing no result, the water coming away perfectly clear and clean. The temperature and pulse remained nearly normal; the cramp-like pains, however, had disappeared, and on palpation of the abdomen only a slight sense of soreness was produced. On Thursday morning Dr. E. H. Dickenshied saw the patient for me. He found him fairly comfortable, having no pain, except that produced during palpation of the abdomen. The abdomen was, however, more distended and tympanitic, the belching more pronounced, the pulse had quickened, but the temperature had not gone above 99⅖° F., the highest point reached during his illness. The tongue was slightly swollen, brown, and furred. There had been no movement of the bowels. About 10 A.M. vomiting began and quickly became severe, gradually becoming fecal in character, and continued, in spite of all efforts to control it, until 2 P.M. on Friday, when it ceased. Mild purgation by the mouth only increased the vom-

iting and distress. Enemata of olive oil, given with a long rectal tube, failed to produce any bowel movement, but an enema of twelve ounces of warm water, given at 1 P.M., with the rectal tube, stopped the vomiting entirely. The abdomen became less distended and the patient became exceedingly comfortable in every respect. Dr. H. C. Deaver, who was called into consultation, arrived at 6.45 P.M., and, owing to the marked improvement of the patient, decided to delay operative interference. From this time the patient improved in every respect. The abdomen decreased in size and became perfectly flat, and during Friday night and Saturday he continued to improve. On Sunday morning, at 6.15, the bowels were moved. This was six days since the previous bowel movement. There was absolutely no pain, none even being produced on deep palpation of the abdomen. Owing to the administration of a mild laxative, the bowels again moved on Sunday evening, at five o'clock, and his stool, to all appearances, was perfectly normal. From this time the patient began to convalesce rapidly. He gained strength, and to all appearances the cause of obstruction had been removed. His bowels were moved once or twice daily without the aid of medicine. The stools were perfectly normal. The progress of the case continued very favorably until Saturday evening, December 17, the fourteenth day of his illness, when he was again seized with severe cramp-like pains, precisely like the first attack. There, however, were no other disturbances. Hot applications applied to the abdomen and the administration of a small dose of deodorized tincture of opium controlled the pain. He rested well during the night, and on Sunday was exceedingly comfortable, complaining of only a slight soreness over the abdomen. His bowels were moved on Sunday morning at nine o'clock, and also about five o'clock in the afternoon. These stools were perfectly normal. About eight o'clock the cramp-like pains again appeared, rapidly becoming intense, in spite of the administration of small and repeated doses of deodorized tincture of opium. I was called to see my patient at 11 P.M., and found him in great agony. His body was covered with profuse cold perspiration, the pulse was scarcely perceptible. There was an intense desire to pass urine, palpation over the bladder showing it to be comparatively empty. Catheterization proved this to be correct, as only an ounce or two of urine was withdrawn. A hypodermic injection of one-quarter of a grain of morphine was administered, which produced sleep in twenty minutes. This sleep continued for twenty-five minutes, when he awoke absolutely free from pain. His condition became gradually worse, and in spite of injections of strychnine, which were freely given, the pulse failed to respond. Death ensued at ten minutes after three on Monday morning, December 19.

The post-mortem examination showed all the organs to be normal with the exception of the intestinal tract, in which at various points a very slight acute inflammation was found. Upon searching the intestines a hard mass was discovered at the junction of the jejunum and ileum. After transverse section of the bowel had been made an effort was made to move this mass, but it was so firmly lodged in the bowel that a longitudinal incision was made over the mass to effect its removal. Eighteen inches above the point of lodgement of the mass a perforation was found in the intestine, which was about three-eighths of an inch in diameter. The edges of the bowel about the perforation were smooth, and from all appearances the perforation was of recent origin. The mass upon examination proved to be an enterolith or possibly a gall-stone. It was cylindrical in form, its greatest diameter being one and one-sixty-fourth of an inch, varying in diameter to twenty-three thirty-seconds of an inch; its length was also one and one-sixty-fourth of an inch, and weighed 195 grains. I have had this patient under observation for six years, and in all this time there was never any evidence of the presence of an enterolith or the passage of gall-stones. During these six years he had occasion to consult me not more than four or five times. Two years ago he had an attack of grippe and developed a slight pneumonia. About one year ago he had a slight congestion of the liver, which abated in several days. However, during the past two years, on several occasions, he suffered from what apparently was acute indigestion. These attacks being produced by errors of diet and yielded to simple treatment. During these attacks he complained of severe pains in the region of the umbilicus, which pains, however, were easily controlled. These symptoms are the only ones, to my knowledge, which in any way may have been an indication of the presence of an enterolith.

The concretion was sent to the Pepper Laboratory of Clinical Medicine, and the following report has been received:

"PHILADELPHIA, May 15, 1899.

"DEAR DOCTOR.—The gall-stone has a diameter of two and one-third centimetres, and a circumference of eight centimetres. It weighs 9.550 grains. Of this weight 93.9 per cent. was organic matter, and 6.1 per cent. inorganic matter. The organic matter consisted of feces for about one-third of the quantity, the remaining two-thirds was composed of cholesterin and bile-salts. Of the inorganic matter, about 32 per cent. was calcium; the remainder, largely chlorides, phosphates, and sulphates, were present only as a trace.

"ALONZO ENGELBERT TAYLOR."

A CASE OF TRANSPOSITION OF THE VISCERA AND OF THE GREAT VESSELS, WITH PULMONARY STENOSIS AND PERFORATE SEPTUM VENTRICULORUM.[1]

By J. P. Crozer Griffith, M.D.,

PHILADELPHIA,

Clinical Professor of Diseases of Children, University of Pennsylvania.

The following interesting case of transposition of the viscera, with anomaly of the heart, came under my observation recently. I desire to report it to the society, and to exhibit the heart and lungs and the photographs of the cadaver. The clinical history is as follows:

Wm. B., eight months old, admitted to the Children's Hospital December 30. He weighed nine pounds at birth. There is no history of cyanosis exhibited at that time. Three months ago he began to have attacks of cyanosis and dyspnea, lasting about twenty minutes, and occurring about half a dozen times a day. In these attacks he became blue in the hands, feet, and face, and had rapid breathing, with crying. During the attack he would not take nourishment. Since the beginning of this condition he has always been somewhat blue. He has lost much in weight.

On admission the child seemed ill and was distinctly cyanotic. The notes of the examination, made on January 2, read as follows: The child lies apparently comfortably on its back. The face has a decidedly bluish cast, and the body also to some extent. A systolic murmur is heard with greatest intensity at the pulmonary cartilage and at the third left interspace close to the sternum. A murmur is also heard distinctly over the midsternum, and faintly at the aortic cartilage and the apex. It is not transmitted into the axilla. There is no thrill. The cardiac dulness is bounded above by the third rib, and on the right side by the left edge of the sternum. The apex-beat is in the fourth interspace within the nipple line.

The diagnosis was made of pulmonary stenosis, probably associated with perforate septum ventriculorum. Further examination was deferred. The child soon sickened with what appeared to be symptoms of pneumonia. His cyanosis increased, and he was so weak that he was treated purely symptomatically, and the actual condition of the

[1] Read before the American Pediatric Society.

Photograph showing thorax and abdomen opened, with transposed viscera.

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viscera not investigated by physical examination. This plan of letting alone, while doubtless beneficial to the patient, is the source of regret to us now, as the existence of the transposition of the viscera shown at the autopsy was consequently not discovered *intra vitam.*

The following notes of the post-mortem appearances are derived partly from abstracts from the records of the autopsy made by Dr. Alfred Hand, Jr., pathologist to the hospital, partly from personal study of the heart after its removal:

The left lung has three distinct lobes; the right lung two distinct lobes. The heart is evidently hypertrophied. It occupies the normal position in the chest, with its axis running obliquely downward from right to left. The left ventricle lies chiefly posteriorly, as in the normal heart; its walls are much thickened; the auriculo-ventricular valve has two leaflets. The right ventricle lies more anteriorly, as usual; its walls are somewhat hypertrophied; the auriculo-ventricular valve of this side has three leaflets. The interventricular septum is deficient in its entire upper portion. The foramen ovale is patulous. The aorta arises from the right ventricle, lying to the right of and, at its origin, somewhat anteriorly to the pulmonary artery. It passes upward and arches slightly from right to left, but then passes almost directly backward, arching over the right bronchus and descending in the thorax upon the right half of the vertebral column. In its course it gives off a right subclavian, a right common carotid, and then the innominate, which divides into the left carotid and the left subclavian. The coronary arteries arise from the right ventricle. The pulmonary artery arises from the left ventricle, to the left of, and slightly posterior to, the origin of the aorta. It is much narrowed both at the orifice and in its trunk. The valves are small, poorly developed, and thicker than normal. The pulmonary artery gives off the ductus arteriosus, a small trunk, which is patulous to a large probe up to, but not into, the aorta.

The relative positions of the pulmonary artery and the ascending portion of the arch of the aorta are, therefore, practically identical with those of the normal relation, save only that there is absent the normal crossing of the beginning of the aorta behind the pulmonary artery from left to right.

The pulmonary veins enter the right auricle. The inferior vena cava ascends through the diaphragm to the left of the median line, and empties into the left auricle. The superior vena cava likewise empties into this auricle. The liver lies chiefly to the left side, its larger lobe being in the left hypochondrium. The spleen lies in the midaxillary line in the right hypochondrium. There are two supernumerary spleens. The esophagus descends upon the right side and opens into the cardia of the stomach, which is to the right of the median line.

The pylorus lies to the left. The cecum lies in the left iliac region. The course of the colon is from left to right. The left renal artery and right renal vein are respectively longer than the corresponding artery and vein.

I show here the heart and lungs, which exhibit the peculiarities I have described. Here, too, is a photograph which shows the thorax and abdomen opened, and the viscera in their transposed positions.

The variations which congenital cardiac lesions may exhibit, and the variety of combinations which transposition of the viscera, including and excluding that of the heart-chambers, may give rise to is too great to admit of a discussion of them in connection with this mere report of a case. I may say only that this case appears to be one of transposition of the viscera including the great vessels, but not including the chambers of the heart. There was, namely, no dextrocardia present. The diagnosis of the perforate septum and the pulmonary stenosis was made during life; that of the transposition was not.

This is, I believe, the fifth case of transposition of the viscera which I have been fortunate enough to meet with.

The Treatment of Superfluous Hairs.

A practitioner (*Lancet*, April 29, p. 1202) asks advice as to the treatment in the case of a young lady, aged 26, who is developing a dark moustache about one-eighth of an inch long, which has led to correspondence (*Lancet*, May 6, p. 127, May 13, p. 1340, May 20, p. 1409, May 27, p. 1468). The writers agree that in such a case, where there is a large number of hairs, electrolysis should not be used, for the resulting scars would be a still greater disfigurement. Shaving is recommended, and it is stated that it does not make the hair grow thicker and coarser.

Ethel Williams, M.D. (*Lancet*, May 13, p. 1341, and May 27, p. 1468) orders a lotion of peroxide of hydrogen to be applied to the part every three or four nights and the hairs well soaked in it. The hairs are thus reduced to a pale golden color and rendered unnoticeable. The treatment has to be continued, but it is not distasteful to the patient, which shaving is. The hair becomes very brittle, splits, and breaks a good deal, but this is an advantage. Some irritation of the skin is produced, but it disappears in a few hours on washing and applying vaseline.

Mr. Jonathan Hutchinson considers that depilation is the best remedy for this condition; but ladies generally object to the operation. —*Medical and Surgical Review of Reviews.*

LA GRIPPE.[1]

By A. F. Van Horn, M.D.,

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In view of our recent battle with this disease in its epidemic form, I write upon the subject of la grippe, feeling that I have a subject before me that has as many heads as the mythological Hydra.

It is my purpose to give a brief *résumé* of the history and etiology of this disease, then study its symptomatology, complications, sequelæ, and treatment from the stand-point of personal experience in the several epidemics that have occurred in the last nine years.

Definition.—La grippe is an acute, microbic, contagious fever of short duration, if uncomplicated; but very frequently greatly prolonged by complications or sequelæ of a more or less serious nature. It is also frequently associated with a catarrhal condition of the mucous membrane of the respiratory or digestive tracts, and with great disturbance of the nervous and muscular systems.

History.—The first epidemic of which we have any medical record occurred in 1510 A.D., although this disease had doubtless appeared, in its epidemic form, prior to that time. The first epidemic that occurred in this country was in 1655. Since the last-named date epidemics have swept over the whole known world from time to time. These epidemics have generally started in the far East, and travelled in a westerly course over the eastern continent, across the Atlantic to our own shores, and then crossed this continent to the Pacific.

Epidemics of la grippe have formerly occurred after long intervals of time, until since the one that first showed itself in this country in December, 1889. Since that time we have had three severe epidemics, and there has never been a time when it could be said that the country was entirely free from cases of this disease.

Etiology.—As to the etiology of la grippe, I think that all are agreed that the bacillus, discovered by Pfeiffer in 1892, is the exciting cause. This germ seems to be universally distributed throughout the world, for the disease shows itself at widely separated points at the same time, outbreaks occurring on board ships far out at sea at the same time that they occur on land hundreds of miles away. It seems probable that the germs are present at all times, and that, under special atmospheric or telluric conditions, they take on greater activity, and

[1] Read before the Plainfield Medical Association, April 5, 1899.

thus cause the severe epidemics which come upon us at irregular intervals.

The predisposing causes of this disease are excesses of any kind, overwork, mental or physical strain, other diseases, or anything that has a tendency to weaken the system. Residence does not have any effect upon the cause of this disease, for it occurs as well in the mansion of the rich as in the hovel of the poor, on the high mountain as in the valley, and upon the islands of the sea as well as in the interior of the continent. No age is exempt from this disease, although small children do not seem to be as liable to it as those who are older, and the aged seem more likely to be attacked by it than those who are in middle life.

Clinical History.—When we come to study the clinical history of la grippe we then learn the protean forms in which it can manifest itself.

For convenience of study we will take up the three forms in which the disease most frequently shows itself, not forgetting that any two or all three of these forms may be combined in one patient. The three forms in which we most frequently meet the disease are the cerebro-spinal, or nervous form, the respiratory form, and the gastro-intestinal form.

The cerebro-spinal or nervous form is characterized by a very sudden onset, without any prodromal symptoms. The patient is generally seized with a chill of greater or less severity, soon followed by a rise of temperature varying from 100° F., in the mild cases, to 103° in the more severe ones. The pulse soon becomes more frequent, varying from 90 to 120 per minute, in some cases being full and strong, and in others weak and compressible. At about the same time that the chill comes on the patient will begin to complain of intense headache, located in the frontal region, and sometimes accompanied by an equally severe pain in the occipital region. The eyes are more or less reddened. All the ocular muscles are stiff, and the eyeball feels sore when pressed upon through the lids. The whole nervous system is affected; every nerve in the body aching as with a general toothache. The muscles are stiff and sore, as though they had been bruised or beaten. The lumbar muscles are especially affected by this stiffness, some patients being unable to turn in bed without assistance. The urine is scanty and highly colored, with an abundant deposit of the urates when it gets cold. The tongue is coated with a white or yellow coating, although cases occur in which the tongue is clean; but it appears as though it had been washed with some crimson coloring matter. The appetite is lost, and the patient expresses great repug-

nance for food. During the first day or two of the attack the patient complains of feeling chilly and hot, alternately.

The disease generally runs a course of from three to seven days, when, if no complications appear, convalescence will be established. Convalescence in these cases is generally rather prolonged; the patient suffering from great muscular weakness, lack of appetite, and general nervous prostration. Cases vary greatly in the severity of the symptoms, some patients being able to continue their usual business, although not feeling as well as usual, while others will be confined to bed throughout the attack, and for some time after convalescence has been established.

During convalescence I have noticed, in a number of cases, that the temperature would be subnormal for several days, sometimes being as low as 97° F. This condition has existed as well in cases where no antipyretic drugs have been given as where they had been used. Sometimes there will be a corresponding decrease in the pulse-rate, while, at other times, it will be at or above normal.

In the respiratory form we have the sudden onset, as in the nervous form, but the chill, if present, is not so severe; the temperature does not reach as high a point, and the muscular and nervous pains are not as severe as in the nervous form. There is a feeling of constriction and rawness in the upper air-passages, oppressed breathing, sometimes hoarseness of the voice, coryza, intense redness of the eyes, dry, hard cough, with very little, if any, expectoration, loss of appetite, and a generally debilitated condition.

Upon physical examination we find a harsh respiratory murmur over the bronchial tubes, with irregularly distributed râles of a crackling character, which may change their quality and location very rapidly. The bowels are quiet, the tongue is coated with a yellow fur, and the urine is nearly normal. After a day or two the patient will begin to expectorate a tenacious mucus, and we will find moist râles in the larger bronchi; but even when expectoration takes place, it is only after prolonged spells of coughing that a small amount of mucus can be brought up. These coughing spells are especially harassing upon retiring at night and getting up in the morning, sometimes lasting for an hour at a time. If the disease does not terminate in this stage we soon get a purulent secretion from the bronchial tubes, and we can hear fine, moist râles out in the smaller subdivisions of the bronchi. It is in old people that we are most likely to find this latter form of bronchial irritation.

In some cases of the respiratory form we find an intense inflammation of the mucous membrane of the naso-pharynx. The throat will have a redness equalling that of scarlet fever, while the mucous

membrane will be as dry as parchment, seeming as though it would crack with every movement of the underlying muscles. The pain is intense, causing great suffering and difficulty in swallowing, while the dry mucous membrane creates an intense desire for some liquid to cool its parched surface. There is no swelling of the tonsils or cervical lymphatic glands, no false membrane, or any other indication of diphtheritic infection complicating this form of the disease.

The gastro-intestinal form is characterized by a catarrhal condition of the mucous membrane of the alimentary canal. The prominent symptoms are nausea, vomiting, tenderness over the whole abdomen, loss of appetite, some fever, more or less muscular soreness and headache. The tongue is usually coated with a yellow or brown fur, although in some cases it will be clean and red. The pulse is rapid and feeble, and the patient is greatly prostrated. The movements from the bowels are very frequent and offensive, thin and watery in some cases, and in others of a dysenteric character, and are sometimes accompanied by great tormina and tenesmus. The urine is scanty and highly colored, and frequently there is a very irritable condition of the bladder. This form lasts from two to seven days, and is followed by a prolonged convalescence.

Complications and Sequelæ.—The most frequent complications of la grippe are bronchitis and pneumonia. In nearly all cases of the respiratory form we have some inflammation of the bronchial mucous membrane; but it is the more severe form of bronchitis that is to be considered as a complication of this disease, and which will prolong the disease several days, and occasionally cause a fatal result. In the aged or infirm the bronchitis is likely to run a chronic course, and be accompanied by a very profuse purulent expectoration and a harassing cough.

Next to bronchitis, pneumonia is the most frequent complication, and the one that most frequently leads to a fatal issue. The pneumonia may be either of the croupous or catarrhal form. This complication may show itself in the early stages of an attack of la grippe or at any other time during the course of the disease; but sometimes it will appear rather as a sequel than a complication, not coming on until after convalescence is established, and the patient is able to be up and around the house, or even out of doors.

The onset of pneumonia is usually marked by a sudden rise of temperature, with or without a preceding chill, an increased frequency of the pulse and respiration, an increase in the cough with a decrease in the amount of expectoration, and with a great increase in the prostration of the patient; but in some cases this complication comes on very insidiously, and the first thing we know we may have a complete

consolidation of one or more lobes of the lungs. In one case that came under my care, a child, three years old, was attacked with la grippe in rather a mild form, accompanied by a slight bronchitis. When I saw him, on the first day of his sickness, there were no signs of any lung trouble, excepting the bronchitis, and by the morning of the second day he seemed to be somewhat improved; but by the evening of this day there was a complete consolidation of the lower lobe of the left lung without any considerable rise of temperature or pulse, but with greatly increased respiration. By the morning of the third day both lungs were completely consolidated, excepting at the apices; and in a few hours the child was dead. This was an extreme case, but it very well illustrates how quickly, and with what terrible results, this complication may arise.

Just what is the cause of this frequency of pneumonia in la grippe it is hard to say; but it seems to me that the irritated condition of the bronchial mucous membrane opens a way for the germ of pneumonia to enter, while the great nervous and physical prostration prevent the system from throwing off the poison which thus has free course to manifest itself in bringing on an attack of this dread disease.

Another frequent complication is a weak and irregular action of the heart. This trouble usually comes on late in the attack of the disease, and is more frequently a sequel than a complication. The heart action is very feeble and irregular, missing a beat at irregular intervals, sometimes beating fast, at other times slow. The valves of the heart are not impaired, but the trouble is in the heart-muscle itself. The cause of this heart weakness is that either the toxin of the grippe bacillus or the bacillus itself attacks the nervous or muscular elements of the heart, and thus brings about a trouble that frequently lasts for some time, and, in some cases, shortens life.

In the February number of the University Medical Magazine. Dr. S. W. Morton reports two cases of very slow heart action as a complication of influenza. In one of these cases the pulse was 32 and in the other 40 per minute.

Occasionally, in the cerebro-spinal form, we have acute congestion of the brain as a very serious complication. I call to mind the case of a young farmer, who started away from home, apparently in perfect health, one afternoon in February, 1890. In about four hours he returned home, saying that he had had a chill about an hour previous to his return, and that now he was burning up with fever. In a few minutes, after he got home, he became unconscious, and when I saw him, about an hour later, he was in a stupor from which he could not be aroused. The pupils were equal in size, and responded to light; the pulse was 120 per minute, full and strong; the temperature was

105° F. in the axilla, and the face was very much congested. After copious bleeding from the arm, the patient aroused from his stupor, the pulse was reduced in force and in frequency, and the temperature soon fell two degrees. After this the patient passed through a typical attack of the cerebro-spinal form of la grippe.

Cerebro-spinal meningitis is said to be an occasional complication, but I have never encountered it in my own practice.

Chronic gastro-intestinal catarrh sometimes follows the gastro-intestinal form of the disease, proving persistent, and very rebellious to treatment.

In the recent epidemic of la grippe a persistent neuralgia has proved to be the most frequent and trying sequel. This neuralgia has attacked different sets of nerves; but it has been most frequent in the occipital, the fifth, and the intercostal nerves.

A frequent sequel of la grippe, in children, is suppuration of the lymphatic glands, the glands most frequently affected being the cervical and axillary, although any of the glands may be attacked.

Diagnosis.—The disease with which la grippe is most likely to be confounded is simple catarrhal fever, or a "common cold"; but the diagnosis can usually be made by considering the following points: In la grippe we usually have a very pronounced chill, high temperature, rapid pulse, severe headache, and pain in the eyes, great muscular soreness, with great physical prostration. While we may have nearly all of these symptoms in catarrhal fever, they are not so marked as in la grippe.

We frequently have difficulty in distinguishing the gastro-intestinal form from simple gastro-intestinal catarrh. While these two diseases greatly resemble each other in their symptoms, yet, in gastro-intestinal grippe we have, in addition to the stomach and bowel symptoms, a more severe headache, greater muscular soreness and prostration than in ordinary gastro-intestinal catarrh.

The more severe forms of this type of la grippe are distinguished from typhoid fever by their more rapid onset, absence of enlargement of the spleen, and typical typhoid eruption, the difference in the character of the stools, and the shorter duration.

Prognosis.—The prognosis of uncomplicated grippe is good, the mortality being about ¼ of 1 per cent.; but the liability to grave complications and sequelæ should make us very guarded in our prognosis, for there is no man, unless he be a prophet or the son of a prophet, that can say, positively, what will be the outcome of an attack of this arch-fiend of all diseases.

Treatment.—The general management of an attack of la grippe is a very great aid to the medicinal treatment. Indeed, in the mild

attacks it is the most essential part; for many of these cases will recover in a short time, with proper care, without the use of any medicine whatever.

One of the first things to be attended to, when called to see a case of la grippe, is to have it distinctly understood that the patient is to be confined to bed in a room with the temperature maintained between 65° and 70° F.; but this temperature is not to be maintained by that abomination, a kerosene-oil stove, which, while it supplies heat, uses up the oxygen of the air, and gives off a lot of vile and foul-smelling gases for the patient to absorb through his lungs.

While attending to the heating of the room, we must also see that proper ventilation is provided, and that the patient is protected from draughts or sudden changes of temperature.

In taking up the medicinal treatment of la grippe it is not my purpose to enter into any theoretical discussion, but to give you the line of treatment that I have found most successful in my own practice, hoping that the discussion may bring out many valuable points as to the management of this disease as we meet it at the bedside.

In the cerebro-spinal form, if the patient is seen early in the attack, the first indication will be to combat the chill, and the second to administer remedies for the relief of the pain and fever. The first indication can best be met by the use of mustard foot-baths, dry heat to the body, and hot drinks internally. If there are any signs of collapse during the chill, strychnine, atropine, and aromatic spirits of ammonia should be administered hypodermically.

The second indication is met by the use of such medicines as will relieve pain in the shortest possible time, such as phenacetine, codeine, or Dover's powder. For the relief of the muscular soreness, ammonium salicylate or salol are very useful remedies. A favorite prescription of the writer's is as follows:

℞ Phenacetine . . . . . gr. xxxvi–℥i;
Codeine sulphate . . . . . gr. iss–gr. iii;
Salol . . . . . ℥i. M.
Fit chart No. XII.
Sig.—One powder every two hours.

If there is any contraindication to the use of salol, the salicylate of ammonia is substituted in three-grain doses. In addition to these powders, two grains of quinine sulphate are given every four hours.

If constipation exists, the bowels should be opened with small doses of calomel or blue mass, one or two pills of aloin, belladonna, and strychnine, or citrate of magnesia; but purgative doses should never be given.

After the acute stage of this form has passed, the pain relieved, and the temperature reduced to near the normal point, the above remedies should be discontinued, and tonics substituted for them. The best tonic for the weakened nervous and muscular systems is strychnine, in full doses, one-thirtieth to one-twentieth grain being given three or four times a day. If anemia exists, some preparation of iron should also be used.

The diet in this form of la grippe should be light, easily digested, and nutritious, consisting of eggs, mutton- or lamb-chops, beefsteak, oysters, toast, milk, and custards.

In the respiratory form, in addition to the remedies used to relieve pain and reduce the temperature, the bronchial inflammation calls for treatment. In the first, or congestive stage, inhalations of steam, vaporized lime-water, or oil of eucalyptus, and the administration of apomorphine, syrup of ipecac, or citrate of potassium will aid greatly in promoting secretion and relieving congestion. In the later stages, ammonium carbonate or chloride in combination with syrup of ipecac (and syrup of white pine compound) will afford great relief from the harassing coughing spells. The external use of turpentine will greatly hasten the recovery of these cases of bronchial grippe.

In those cases of the respiratory form, where the greatest manifestation of the disease is in the naso-pharynx, sodium benzoate, in five-grain doses, seems to be almost a specific. Spraying the throat and nose with hydrogen peroxide or gargling the throat with a saturated solution of potassium chlorate, in combination with the fluid extract of rhus glabra, will greatly aid in relieving this distressing condition.

The treatment of the gastro-intestinal form must be suited to meet the indications as they arise. For the relief of the intense nausea and vomiting, minute, frequently repeated, doses of arsenite of copper act most happily. This remedy, followed by salol, small doses of opium, and subnitrate of bismuth, will usually relieve the pain, diminish the frequency of the passages, and disinfect the intestinal contents. Hot applications, either in the form of poultices or the hot-water bag, will be of great service in relieving the abdominal tenderness, while, at the same time, remedies must be used to relieve the symptoms of the other forms of the disease that may be present. The diet should consist of the various meat broths, oyster and clam broth, and milk.

It may be necessary to use stimulants in any of the forms of la grippe; but they are never to be given unless there is a clear indication for their use.

In the management of convalescence from any form of this disease, great caution should be exercised, even in the mildest cases, in

allowing the patient to resume his usual business habits; for a very slight exposure to inclement weather or over-exertion may open the way for him to be attacked by some of the numerous sequelæ that so frequently follow la grippe; therefore, the patient should be warmly clad, should avoid excitement or over-exertion, partake of wholesome, nutritious diet, and be built up by the use of such tonics as the syrup of hypophosphites or cod-liver oil.

The pneumonia complicating, or following, la grippe requires about the same line of treatment as primary pneumonia; but there is usually a greater call for stimulants than in the primary disease. This use of stimulants is made necessary by the fact that the system is greatly depressed by the primary influenza, and this depression is greatly increased by the grafting on of pneumonia.

Chronic bronchitis is a very trying sequel of la grippe, and requires very careful management. The stimulating expectorants, such as the carbonate and chloride of ammonia, are especially indicated. The syrup of hydrodic acid, combined with syrup of hypophosphites, will aid greatly in relieving the bronchial inflammation and in building up the patient. In some cases terebene or oil of eucalyptus will be of great service in subduing the bronchial inflammation.

Strychnine, digitalis, and strophanthus will give great relief in the cases where la grippe leaves a weakened heart as a sequel. In some of these cases it is necessary to keep a patient under the influence of one or other of these heart-tonics for months or even years at a time.

In treating grippal neuralgia we find ourselves facing one of the most obstinate of all the complications or sequelæ of the disease, and one in which a great variety of remedies have been used. All the coal-tar products have been recommended in this neuralgia; but the safest and most reliable one is phenacetine. Quinine and salol combined with phenacetine will frequently afford great relief; but we often meet cases that can only be relieved by the use of a full dose of morphine, either by the mouth or hypodermically. After the morphine has been used, the neuralgia seems more amenable to treatment, and we find that the cure can be completed by the use of strychnine, phosphide of zinc, cannabis indica, or aconitine. Dry heat is a great aid in relieving the pain of any of the neuralgias following la grippe.

Congestion of the brain complicating la grippe calls for the abstraction of blood from the arm or the use of wet cups at the nape of the neck, cold to the head, and the administration of full doses of the bromides, in addition to usual treatment of la grippe.

Inflammation of the lymphatic glands can be combated by the use of syrup of hydrodic acid internally and ichthyol, in the form of an ointment or a lotion, externally. If suppuration occurs, the pus should

be evacuated as soon as possible, while tonics of iron, quinine, and strychnine are administered internally.

Codeine, sulphonal, and trional are the remedies best suited to overcome the insomnia that frequently occurs during or after an attack of la grippe.

In closing, I desire to emphasize the following points:

(1) La grippe, *per se*, is not a dangerous disease; therefore we should endeavor to prevent, as far as possible, the occurrence of the complications and sequelæ which have been mentioned.

(2) All depressing forms of treatment are to be avoided, and the patient strengthened by the use of tonics and nutritious diet.

(3) During convalescence the patient is to be warned against exposing himself before he has fully recovered his strength.

(4) While taking a hopeful view of an attack of this disease, we are to be guarded in our prognosis until we are sure that the patient will escape the numerous complications and sequelæ.

MEMORANDUM.

SUDDEN RECOVERY IN A LONG-STANDING CASE OF MELANCHOLIA.

The following case was reported at a meeting of the Pittsburg Academy of Medicine, held May 29, 1899:

Mrs. C., aged 34 years, who had for seven years past suffered from melancholia, the last five years of which she was so apathetic that she was dressed and undressed by the nurses and had scarcely uttered a single word, was put to bed on the night of May 16, 1898, as usual, by her nurse at St. Francis Hospital. The next morning, when the sister went to get her up, dress her, and put her on her arm-chair, where she had spent the last five years, the patient was already up, busying herself with making her own bed, and she greeted the sister cordially, conversed freely with her, telling her that she thought she had gotten well, and that she would like to go home. From that morning up to the present time (more than a year) the patient has seemed to those about her to be entirely rational, as she certainly did to me when I saw her, a few weeks ago, upon a visit she made to the hospital. She spoke freely of her illness, gave the names and characteristics of the various physicians who had visited her, and related many

of the incidents which had occurred during each year of her apathetic depression.

During the last five years of her illness, while she was in a condition of profound apathetic melancholia, I had supposed that dementia was steadily advancing; and had I been asked for an opinion concerning her on the morning of May 16, I should have said that she had been ill so long and dementia had so far advanced as to render a recovery impossible.

Of course, there could have been no dementia at all; and the case is valuable as showing how long melancholia may exist without dementia ensuing, and also as showing the possibility of recovery in such a case. A practical lesson which this case emphasizes is that a patient with apathetic melancholia, although he may not utter a word for years, may remember and understand all that is said in his hearing; so it constantly behooves nurses and physicians to be careful what they say in the presence of such a patient. Happily the patient whose case I have related recalled no unkind words.

With all our increased and increasing knowledge of physiology, psychology, and neurohistology, one cannot escape the thought that a scientific explanation of a recovery in a case like this is a long ways off in the distant future, if, indeed, it shall ever be capable of a scientific explanation which will really explain.

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BUREAU FOR DOCTORS VISITING PARIS.

DR. FREDERIC GERIN LAJOIE, an American surgeon, resident in Paris, has obtained the necessary authority from the Directeur de l'Enseignement Supérieur and the Dean of the Faculty of Medicine to establish a Bureau de Reseignements, or information office, at No. 21 Rue de l'Ecole de Médecine.

His idea is to provide visiting American physicians who come to Paris to study the French systems of practising medicine with every detail of information which would facilitate the object of their stay in Paris.

EDITORIAL.

CONCERNING THE RESULTS OF MARRIAGES OF THE DEAF IN AMERICA.

An interesting volume on this subject, edited by Dr. Edward Allen Fay, has recently been issued by the Volta Bureau, Washington, D. C. As the editor of the *American Annals of the Deaf*, Dr. Fay was peculiarly fitted for the task, which he has so successfully completed. It was hoped by this inquiry to settle a number of points which have hitherto been in dispute.

It has been found that marriage among the deaf is much more common in America than in Europe; in the former, 23.1 per cent. of the whole number who attended school up to the year 1890 were known to be married, and the actual percentage is probably much higher. Of European countries the proportion in Denmark alone approaches that of the United States. In the other countries it varies from 12 to 7 per cent. The frequency of marriages among the deaf in this country has increased very markedly. During the first decade of the present century the percentage was 0.02. This rate rapidly increased until in the ninth decade it had reached 22.7 per cent.

In a large majority of the marriages (72.5 per cent.) both parties were deaf. In 20 per cent. of the marriages one of the parties was deaf and the other a hearing person.

Marriages of deaf persons, taken as a whole, are probably somewhat less productive than ordinary marriages. The difference is still more marked in the cases in which both partners are deaf. The congenitally deaf, again, are probably slightly less productive than the adventitiously deaf.

As might be expected, marriages of deaf persons, one or both of the partners being deaf (taken as a whole, without regard to the character of deafness), are far more liable to result in deaf offspring than ordinary marriages. The proportion of marriages of deaf persons resulting in deaf offspring is 9.7 per cent., and of the children born of these unions 8.6 per cent. are deaf. The proportion of deaf children resulting from ordinary marriages is unknown, but is estimated at less than one-tenth of one per cent. The statistics show that 75 per cent. of the children having deaf parents are not deaf, and the

actual proportion is thought to be much higher. As already stated, the tables show but 8.6 per cent. known to be deaf. These results are in accordance with the law of heredity; that a physical anomaly or an unusual liability to certain diseases existing in the parent tends to be transmitted to the offspring, and, on the other hand, that the offspring tends to revert to the normal type. It is to be remembered that deafness is neither a physical anomaly nor a disease, and such expressions, therefore, as "transmitted deafness," "inherited deafness," etc., are inaccurate and misleading. What may really be inherited is some anomaly of the auditory organs, or of the nervous system, or the tendency to some disease of which deafness is either a result or a symptom.

It does not seem that marriage between two persons, both of whom are deaf, either congenitally or adventitiously, increases the liability to deafness in the offspring to a greater degree than where but one parent is deaf. In fact, the statistics show that the percentage of deaf offspring is less where both parents are deaf, as will be observed by the following figures: The proportion of marriages in which both of the partners were deaf, resulting in deaf offspring, is 9.2 per cent., and the proportion of deaf children from these unions is 8.4 per cent. Of the marriages in which one of the partners was deaf and the other a hearing person, deaf offspring resulted in 12.5 per cent., and the proportion of deaf children in this class was 9.8 per cent. Of the marriages in which both of the partners were congenitally deaf, deaf offspring resulted in 24.7 per cent. of the cases, and the proportion of deaf children born from these unions was 25.9 per cent. The ratio of deaf children born to every 100 congenitally deaf persons married to congenitally deaf partners as compared with 100 congenitally deaf persons married to hearing partners is as 30.8 per cent to 34.2 per cent. The explanation given for the fact that the offspring of parents, both of whom are deaf, does not show a greater proportion of deafness than in the instances in which but one parent is deaf, is that as there are a number of causes of this physical defect, the pathological condition is not the same in the different cases, and therefore the union of two persons both of whom are deaf, but from different causes, does not increase the tendency to deafness in the offspring. On the other hand, where the pathological condition in the two partners is the same, the liability to deaf offspring is much greater. This is probably the explanation of the larger percentage of deaf children resulting from the marriage of deaf persons consanguineously related.

The congenitally deaf are far more liable to have deaf offspring than the adventitiously deaf, irrespective of whether the partner be deaf or a hearing person. The following are the figures: Of the con-

genitally deaf (one or both partners) deaf offspring resulted in 13 per cent., and the proportion of deaf children was 12 per cent. Of the adventitiously deaf, deaf offspring resulted in but 5.6 per cent. of the number of unions, and the proportion of deaf children was but 4.2 per cent. When both of the partners were congenitally deaf, deaf offspring resulted in 24.7 per cent. of the marriages, and the proportion of deaf children born was 25.9 per cent. The proportion of marriages resulting in deaf offspring where both partners were adventitiously deaf is 3.5 per cent., and the proportion of deaf children born therefrom is 2.3 per cent. Where adventitiously deaf persons were married to hearing partners, deaf children resulted in 3.2 per cent. of the marriages, and the proportion of deaf children born is 2.2 per cent. Where the adventitiously deaf were married to congenitally deaf partners, deaf offspring resulted in 8 per cent. of the instances, and 6.5 per cent. of the children born therefrom were deaf.

The question of deafness in the relatives is a very important one, as will be seen by the following figures. Where both of the parents had deaf relatives, the proportion of marriages resulting in deaf offspring is 23.5 per cent., and the proportion of deaf children born therefrom is 20.9 per cent. Where one of the partners had deaf relatives and the other had not, the proportion of marriages resulting in deaf offspring is 6.6 per cent., and the proportion of deaf children 6.4 per cent. Where neither of them had deaf relatives, but 2.3 per cent. of the marriages resulted in deaf offspring, and the number of deaf children born is but 1.2 per cent.

These statistics seem to corroborate the opinion expressed by the late Dr. Peet that "the [hearing] brothers and sisters of a deaf mute are about as liable to have deaf mute children as the deaf mute himself, supposing each to marry into families that have, or each into families that have not, shown a predisposition towards deaf dumbness."

The argumentative portion of the book has been omitted for want of space, but the figures given must prove interesting, and tend to correct a number of erroneous ideas that have hitherto been current.

MEDICAL PROGRESS.

MEDICINE.

UNDER THE CHARGE OF

JAMES TYSON, M.D.,

ASSISTED BY

M. HOWARD FUSSELL, M.D., AND A. O. J. KELLY, M.D.

Diaphragmatic Pleurisy.

Zuller (*Münchener medicinische Wochenschrift,* November 22, 1898) gives a description of pleurisy as it occurs between the diaphragm and the lung; a form which is very apt to give rise to localized encapsuled empyemata. There are certain special characteristics which enable the diagnosis of this condition to be made even in the absence of physical signs. These consist chiefly in certain tender points. The first is round, the base of the thorax at the level of the insertion of the diaphragm; the second is in the posterior triangle of the neck, where the phrenic nerve lies on the scaleni muscles; the third is found where an imaginary line, prolonged in the direction of the tenth rib, cuts the parasternal line. It was first described by Gueneas de Mussy, and named by him the "bouton diaphragmatique." The presence of tenderness and pain in this position is most important, and is almost pathognomonic of diaphragmatic pleurisy, more especially of the localized suppurative form. De Mussy and most writers since him have considered this to be the tender point of the phrenic nerve, though von Ziemssen disputes this, on the ground that the function of this nerve is entirely motor. Other peculiarities of this pleurisy are:

(1) The pain is abnormally violent and diffuse. (2) Movement is almost suppressed in the hypochondrium and base of the thorax on the affected side. (3) Physical signs may be absent, or consist in a limited tympanitic resonance at the extreme base, and minus breath-sounds, owing to the compression of the lung by the effusion. (4) Occasionally there is pain on swallowing as the food passes the diaphragm. (5) Hiccough may be present, either from direct irritation of the diaphragm or, possibly, of the vagus or phrenic nerves.

It is important to remember that these effusions, when near the centre of the diaphragm, are out of reach of the exploring syringe. One of the cases seen by the writer is a striking illustration of the value of de Mussy's point in diagnosis. A woman, aged 30, fell ill with fever and pain in the breast. There were no abnormal physical signs in the lungs, and an exploratory puncture gave a negative result; the phrenic nerve in the neck, however, was tender, and the bouton diaphragmatique extremely painful, and by these symptoms alone Dr. Bouveret, of Lyons, diagnosed suppurative diaphragmatic pleurisy, and immediately handed the case over to the surgeon. An encapsuled empyema was found and evacuated. The woman recovered.

Sulphonal-Poisoning.

Lovell Gulland (*Lancet,* December 17, p. 1638) states that an alcoholic man, aged 39, took thirty grains of sulphonal nightly for insomnia,—in all 1200 grains. A week before death his gait was staggering and his speech was thick, which was attributed to alcoholism. He was stupid and sleepy, though easy to rouse, and intelligent when spoken to; motor power was greatly enfeebled and articulation imperfect. The urine was deep claret colored. He died suddenly.

The necropsy showed that the liver was chocolate colored; the kidneys not cirrhotic but congested; the spleen diffluent; the walls of the heart very fatty; the blood chocolate colored, and the brain congested. Microscopically the liver showed no great change, but fatty infiltration of the periphery of the lobules and hyaline degeneration of the walls of the portal vein. In the kidneys the secreting epithelium only was affected, the cells being sunken into masses of granular protoplasm; the spleen was full of "shadow corpuscles," and the suprarenal capsules showed some columns in which the cells were small and shrivelled. The blood showed poikilocytosis.

As regards the symptoms, co-ordination may be affected for weeks by a single dose. In chronic poisoning the gastro-intestinal symptoms generally first appear, then nervous symptoms, ataxia, paralysis of the facial muscles, general convulsions, coma, etc. The urine contains hemato-porphyrin as well as unchanged sulphonal. These cases usually end by heart-failure. In acute cases the symptoms may come on suddenly; the sleep may be for days; hematoporphyrinuria seldom occurs in such cases. The prognosis is, as a rule, good in acute, but not so in chronic cases. Sulphonal is not readily soluble, and it may long remain in the intestinal canal or in the blood, as it is not easily excreted by the kidneys. The constipation which is usually present would assist in this accumulation. Sulphonal may cause death without producing hematoporphyrinuria. The cause of death is probably uremia (using the term in its widest sense). In acute cases, as the poison is slowly absorbed, the stomach should be emptied at once and a purgative given. The kidneys should be encouraged to act freely. Large enemata of warm water have been found useful. In chronic cases the same remedies may be employed as well as large doses of alkalies to render the urine alkaline, and so stop the formation of hematoporphyrin. The maximum daily dose for a man should be from fifteen to thirty grains. It ought never to be given in tabloid form. Hot alcohol (as whiskey toddy) is the best vehicle. Patients ought to be kept under observation during the whole time the drug is being taken.

An Acute Myxedematous Condition, with Tachycardia, Glycosuria, Melena, Mania, and Death.

Osler, in the report to the twenty-fourth annual meeting of the American Medical Association, May, 1898, gives the history of a case which is briefly summarized as follows: A healthy man, weighing 145 pounds, rapidly increased in weight during three months to 182 pounds; the features became full and bloated, and the abdomen enlarged so rapidly that it split the corium in the inguinal regions in wide crescentic lines. Attacks of diarrhea and marked irritability of temper were the only additional symptoms of moment. On February 5 he went South, and in Florida became extremely restless and had delusions. He returned to Elkton, Maryland, on February 13. From this date to March 7, the day of his death, his illness may be divided into two periods. To about March

1 the infiltrated, bloated condition persisted; his mind was clear, the pulse was not above 120; he had slight diarrhea, sometimes with bloody stools. From March 1, coincident with the administration of the thyroid gland extract, he rapidly diminished in weight, and by the fourth he had lost in great part the bloated, infiltrated appearance. The tachycardia was more marked; he had become excited and delirious, and he had developed since March 2 an intense glycosuria.

The clinical picture presented by this case does not conform to any one disease, but presents certain combinations of myxedema with exophthalmic goitre. In the cases reported in the literature, as far as appears, the myxedema has followed the symptoms of exophthalmic goitre at a variable period of months or years. The patient presented first the features of an acute, rapidly developing myxedema. The increase in weight in three months was remarkable, but his appearance, when I saw him first, was not that of ordinary myxedema. He had the bloated appearance of a stout man who had been drinking heavily. During the last part of his life the symptoms were those which we see in the toxemia of acute exophthalmic goitre,—viz., the tachycardia, the slight tremor, the delirium, and the diarrhea. When I saw him, there was no evidence of exophthalmos, though Dr. Ellis thought that on his return to Elkton the eyes were a little prominent.

It seems most rational to suppose that in this case there was a perversion of the function of the thyroid gland, resulting in a toxemia, which presented some of the features of myxedema and some of Graves's disease.

Progressive Ossifying Myositis.

Missim (*Journal de Médecine,* February 25, 1899; *Nouv. Icon. de la Salpêtrière,* 1898; *British Medical Journal,* April 1, 1899) has made an extensive study of this interesting condition, and finds the condition is much more common in the Anglo-Saxon race than in others. Thus, of fifty-one cases, two only occurred in France, the remainder in England or Germany. The condition is characterized by the deposit of osseous material in the connective tissue of the muscles, in the tendons, aponeuroses, and ligaments. It is found especially in children, but may appear in adult life. The beginning is variable, sometimes being altogether chronic, at other times more acute, and accompanied by febrile reaction. In the first case it is insidious, and the only indication is the formation of a painless tumor having at first a slightly boggy feeling, subsequently becoming firm and lastly fibrous, and finally osseous. In many instances we may discover by accident one or more tumors of this nature in the child. In the more acute cases there may be some pain at the seat of tumor-formation, and the tissues are hot, and may show distention of their vessels. The subcutaneous tissue is edematous, and soon there appears a diffuse boggy semifluctuating infiltration, which similarly ends by becoming bony hard. The whole muscle may be involved in this manner, at other times the belly only, the tendons remaining free. This condition may appear without recognizable cause; in other cases there may be history of a fall or some traumatism, or a preceding attack of rheumatism. The muscles of the back, particularly of the neck, are the most liable to attack. The long muscles of the back may form a single bony mass; later, the deltoid, the teres, and the pectoralis major may all be involved. As a result, the head becomes fixed, possibly to one side; ankylosis of the shoulder-joint, with immobility of the scapulæ and vertebral column may

follow. Even the muscles of the upper and forearm may be affected with ankylosis of the elbow; similarly the muscles of the lower limbs may be involved from above downward, especially those on the posterior aspect, with ankylosis of the head and knee. Lastly, the masseters and pterygoids may succumb, resulting in immobility of the jaw. The appearance of the patient is striking, as he is converted into an immovable block, and it is possible to raise him up as one would a wooden figure by the head. The ossified muscles are somewhat irregular in outline, showing depressions and elevations covered by a pallid, thickened skin, which has lost all mobility by reason of subcutaneous adhesion to the underlying tissues. At the same time, the internal functions appear to be unaffected, and there is no alteration in intelligence. The facial muscles appear to escape. The duration extends over many years, and death seems to be due to some intercurrent affection, particularly tubercle.

Lyder (*Norsk. Mag. f. Laegevidensk.,* April, 1899; *British Medical Journal,* May 6, 1899) has met with a case of this rare disease in a girl 4½ years of age, belonging to a healthy family. Soon after her birth it was noticed that the two great toes were abnormally short. During two years she developed normally, but thereafter she began to suffer from stiffness in the right shoulder and back, and this condition had gone on increasing, till now she is unable to do anything for herself. She has had no infectious maladies, has had no pain in the back or limbs, and has shown no intellectual retardation. She is of normal height for her age, hangs her head slightly forward and to the left, and keeps her mouth open, but is able to close it without difficulty. A great part of the musculature of the back, spine, and shoulders is completely ossified, the two scapulæ are quite fixed, and there is left-sided scoliosis. The latissimus dorsi, teres major, and pectoralis major are nearly completely ossified up to their insertion into the humerus, but on the left side the pectoralis major is little affected. The movements of the arms are therefore much restricted, those least interfered with being abduction. The thumbs, like the great toes, were relatively small.

Pulmonary Actinomycosis.

Sabrazes and Cabanes (*Revue de Médecine,* January 10, 1899; *British Medical Journal,* April 8, 1899) have made an extensive study of pulmonary actinomycosis, and, according to them, the pulmonary form occurs in from 12 to 15 per cent. of cases of actinomycosis in general. The lungs may be invaded primarily or secondarily. The primary lesion may be in the esophagus, posterior mediastinum, or even the abdomen, more rarely in the trachea or the cervical cellular tissue. In other cases a primary broncho-pleural actinomycosis may be present. The process is essentially ulcerative, and three stages are described, —broncho-pulmonary, pleural, and fistulous. The actinomycotic lung shows on section numbers of small abscess-cavities and large tracts of fibrous tissue, not unlike caseating tubercle. In the cavity wall small yellow bodies may be seen in great numbers which are the nodules of actinomyces. The sclerosis seems to spread from the vessels; tubercle is a rare association. A very rare form of the disease consists in actinomycotic infection, in which the mycelium does not show the club-like swellings, and in which there is no tendency to the formation of yellow grains. Sometimes the beginning of the disease is acute and the progress rapid. The authors quote a case in which the history was of six months' duration only. Much more frequently it extends over years. Its onset is extremely

insidious, and it is a considerable time before local lesions in the lung can be ascertained. As a rule, the apex is unaffected; the lateral and posterior portions of the lung are the parts usually affected, but Lindt and Israel are quoted as describing cases in which the apex was affected, but in these there was reason to suppose there was coexistent tubercle. After a time the process spreads to the pleura, the two layers of which become adherent by inflammatory exudations and small subpleural abscesses are formed. As the disease goes on, the patients are troubled by incessant cough, loss of weight, and severe pain. The sputa are so extremely fetid that pulmonary gangrene may be diagnosed. Sometimes, on the other hand, they are milky white, almost like brain-pulp, due, according to Israel, to the large amount of fatty cells which they contain; occasionally they may be streaked with blood or rusty, but whatever their appearance, they do not seem to contain elastic tissue, from the fact that the sclerotic process is so extensive and early. The presence of the organism can usually be demonstrated. When the disease has reached the chest wall, there is often considerable extension into the pericardium, abdomen, and other organs. Externally there now appears a boggy red swelling with considerable surrounding edema, though sometimes the swelling is extremely hard. Exploration with a needle rarely shows the presence of fluid, the glutinous pus being usually found containing yellow grains. On its way to the surface, the disease, as might be expected, produces severe bone lesions affecting the ribs or the vertebræ. Internal treatment is unsatisfactory, but good results have been obtained by administration of iodide of potassium and eucalyptus. When the thoracic wall is affected, surgical interference is necessary, though here again treatment is often disappointing, but the authors are able from personal experience to state that the patient treatment of the disease by clearing out dead tissue and necrotic bone and scraping the surface of the diseased tissues, and even the application of the thermocautery may be followed by subsidence of the disease and the disappearance of the actinomyces from the sputum.

Sudoral Typhoid Fever.

Jaccoud (*Journal de Médecine,* March 10, 1899; *British Medical Journal,* May 6, 1899) devotes a clinical lecture to the diagnosis of a particular form of typhoid, which is of somewhat rare occurrence, and which presents many exceptional features. The case was that of a man, aged 26, admitted into hospital on the fourth day of an acute illness, which had begun suddenly, apparently without prodroma, by repeated rigors, intense headache, and general cramp. The next day the pyrexia continued, together with sore throat and diarrhea. On the third day there was considerable cough and dyspnea; on the fourth day the evening temperature reached 39.8° C.; the diarrhea continued, and auscultation showed the presence of general bronchitis. On admission the appearance of the patient was that of some severe illness. There were large red patches of a uniform character over the upper part of the trunk and the sides of the neck, as well as some very small raised papules, strongly suggestive of scarlet fever, and taking into consideration the sore throat one had to consider this diagnosis. On the other hand, by the sixth day it was quite evident, from the course of the temperature, that the scarlatinal element could be eliminated. The diagnosis, according to the author, lay between typhoid fever and a severe form of influenza, but Jaccoud decided that the former was the correct diagnosis, basing his opinion on the fact that when he examined the patient he observed a clammy

sweat, though at the same time the temperature was lowered. This same writer drew attention on a former occasion to this particular group of symptoms occurring in some cases of typhoid,—namely, sweating. This case also showed large, red, livid patches, some being hemorrhagic, in the gluteal region, and it must be borne in mind that such an eruption is not unknown in influenza, especially in certain epidemics, but in the form of typhoid under consideration the remission in the temperature was coexistent with an aggravation of the general state of the patient, and the appearance of sweats could not be attributed to influenza. This remission of temperature was a point of considerable importance in Jaccoud's opinion, as indicating typhoid. There were, however, in this particular case some anomalous symptoms wherein the case differed from others described by the author. For instance, the early appearance of bronchitis on the fourth day, a phenomenon which is usually much later and only slight in amount, while the sweats appeared late, about the fifth or sixth day instead of the first or second, and that they maintained their intensity instead of decreasing, as is usually observed. Another somewhat unusual character was the marbled appearance of the skin of the thighs and abdomen, which showed lines of a somewhat intense red crossing one another in the form of a net-work. In the case under consideration the diagnosis was supported by the subsequent events, as there were intense cephalic symptoms, intestinal hemorrhage, etc. As pointed out by Jaccoud in 1884 this particular form of typhoid is indigenous in Southern Italy. Its incubation is of about ten days' duration, and hence it is occasionally imported to Paris. The writer, however, points out that there is a Parisian imitation of the disease, which in point of fact is liable to show certain anomalies very much as is described above. In the typical form the invasion is absolutely sudden, in that a single and prolonged rigor with a rapid rise in temperature is followed by an abundant and prolonged stage of sweating. The temperature then falls to normal, but without any amelioration in the patient's condition. There is, on the contrary, an intensely severe headache which prevents sleep, and lasts about a week. On the second day there is a similar attack of pyrexia, and the face often presents the appearance of measles, a fact which, if unknown to the medical attendant, may cause an error in diagnosis, as it so closely resembles that disease and also typhus. In this way four or five days may pass with intermittence of pyrexia followed by remittent temperature, together with intense perspiration. Later on the bronchitic and abdominal phenomena of a more purely enteric character appear, together with the typhoid exanthem. It is a curious fact, however, that constipation rather than diarrhea is a feature in these cases. Intestinal hemorrhage is common, but, as a rule, not severe. The duration of these cases is, as a rule, long,—fifty, sixty, or even ninety days,—and the prognosis is, usually speaking, favorable. From this description it will be seen that the diagnosis of malaria is perhaps that which, of all others, may occur first to one's mind, especially in persons coming from certain parts of Italy. The administration of quinine, however, in such cases is without the least effect, and should it have been prescribed on a mistaken assumption that the case is malarial, the fact of its being inefficacious should call for a reconsideration of the case. The author points out that the only treatment for such cases is one of general principles, as there is nothing that calls for any special method.

Myxedema treated with "Colloid" Material.

Buchanan (*British Medical Journal*, June 17, 1899) reports the case of a man, aged 54 years, suffering from myxedema, treated with "colloid" material.

The chief symptoms were as follows: The skin was almost lizard-like, dry, and fissured, with complete absence of sweating; his face was waxy-looking, with a pink blush on each cheek. The hair was scanty, brittle, dry, and white on the head, absent from the eyelids, and partially from the brows, pubes, and axillæ; the beard and moustache were stubby. The circulation was slow, the pulse ranging from 54 to 60; the hands and feet much affected by cold, the fingers turning white. The temperature ranged from 96.5° to 97° F. Tactile sensibility was slow, and the expression was vacant and fixed. He never laughed, because his face was "too stiff," talkativeness was marked, with a monotonous voice, and the use of many qualifying phrases. His memory was poor for recent events. There was extreme sleepiness, so that, although he slept twelve hours at night, he fell asleep at any time, if unoccupied or left alone; he said he dreamed constantly during sleep. There was complete anorexia. The lips, tongue, and fauces were greatly thickened and salivation extreme. The urine had a specific gravity of 1020; it was acid and free from albumin and sugar; 300 grains of urea were excreted in twenty-four hours.

On January 25, 1898, he was given one palatinoid of "colloid" material at night. The dose was increased until he was taking four in twenty-four hours by February 22, when but two were given daily, and in June, one was administered daily.

No symptoms of "thyroidism" arose during the treatment. The result was a rapid disappearance of all symptoms, and a return to normal health. The hair during the treatment all fell off; the absolute baldness was followed by a thick crop of brown hair, which required cutting three times before June. The pulse and temperature returned to normal; the skin also, with normal perspiration; the mental inactivity disappeared. In May, 1899, he remains in excellent condition. He is attending to business satisfactorily, whereas before treatment he had to give it up.

A full account of the chemistry and preparation of the "colloid" material will be found in the *British Medical Journal* of March 21, 1896, January 23, 1897, and February 17, 1897.

On the Treatment of Abdominal Palpitations.

Wade (*British Medical Journal,* June 17, 1899) has found nitroglycerin useful in cases of excessive palpitations of the aorta. He finds one-two-hundredth of a grain at night often sufficient.

He believes in these cases the abdominal vessels are in a state of high tension. The nitrites have the same effect on this condition as does bleeding.

The author states that the same principle of treatment is applicable also to many cases of cold hands and feet, as this symptom is due to contraction of the local arterioles, and not to insufficient action of the heart, as has often been supposed.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

ASSISTED BY

CHARLES H. FRAZIER, M.D., AND GEORGE M. PURVES, M.D.

Cure of Ascites due to Liver Cirrhosis by Operation.

Rutherford Morison (*Lancet*, London, May 11, 1899). The author reports a case of ascites due to cirrhosis of the liver cured by means of an operation, the object of which was to relieve the obstructed portal circulation by the establishment of an efficient anastomosis.

The case was that of a man exhibiting the typical signs of ascites from such a cause.

The abdomen was opened between the umbilicus and ensiform cartilage for exploratory purposes; the characteristic "feel" of a hobnail liver, with an enlarged notched spleen was present. A second opening was made in the anterior parietal wall for the purpose of admitting a glass drainage-tube into the recto-vesical pouch.

After the peritoneal cavity had been emptied the anterior surface of the liver, the anterior surface of the spleen, the exposed coils of intestines, and the parietal peritoneum were all firmly sponged, and the omentum was attached by sutures to the parietal peritoneum lining the anterior abdominal wall, the wound was then closed by deep and superficial sutures.

The happy outcome from such an operation may be judged from the fact that the operation was performed on January 12, 1897, and the last heard from it was in January, 1899, when an insurance company, asking the nature of the operation, as the patient had been passed by their medical adviser as a "first class life."

At the post-mortem of a case that had undergone such an operation, it was shown "that there were numerous band-like adhesions between the liver, spleen, and intestines; that the omentum is firmly adherent over the anterior abdominal wall by strong bands. In all these adhesions innumerable injected vessels are seen passing from the omentum and viscera to the parietes.

This evidence establishes the belief that an efficient anastomotic circulation can be brought about by operation with the hope of prolonging life several years.

Cases of Gastroplasty and Pyloroplasty.

Thomas H. Morse (*Lancet*, London, May 13, 1899). The first case was that of a man, aged 60 years, who had for twenty years suffered with pain in the stomach of a gnawing nature, which was distinctly aggravated by the ingestion of food. A diagnosis of cancer of the pylorus was inclined to, but that of stomach being bound down by adhesions was subsequently entertained.

An exploratory operation was performed, it being found that the stomach was bound down by several strong adhesions, and that also the stomach itself was of an hour-glass shape, on account of a stricture across its middle.

At a subsequent operation the stomach was slit up by an incision in its long axis, which incision was converted into a vertical one by means of sutures.

The patient made a rapid and good recovery, gaining considerable in weight.

The second case was somewhat similar in symptoms, etc., except that the pylorus was involved by means of the adhesions to the surrounding structures. Pyloroplasty was performed. The patient made an excellent recovery.

These cases and cases such as these have led many to consider as justifiable the exploration of the inside of the stomach for diagnostic purposes, and doubtless many cases that were formerly treated purely medically will in the future be cured by operation.

A New Method of Reduction in Separation of the Lower Epiphysis of the Femur.

J. Hutchinson and H. S. Barnard (*Lancet,* London, May 13, 1899). The cases reported are those of a separation of the lower epiphysis of the femur due, in most instances, to a forcible hyperextension of the knee-joint, and hence, if displacement occurs, it is constantly a forward one of the epiphysis.

From dissection they have shown that when the lower epiphysis was torn off by over-extension, it was carried forward with the tibia by the pull of the crucial ligaments; whilst the end of the diaphysis was displaced backward into the popliteal space. If unreduced, this projecting end of the diaphysis prevents flexion beyond a right angle. The epiphysis is tilted strongly forward, being due partly to the pressure of the end of the diaphysis on its posterior edge, and partly by the tension of the gastrocnemius muscle.

The periosteum is much thickened like a cuff around the epiphyseal disk. This thick band was torn across behind, but in front the periosteum remained intact; this is important, because it has been supposed that the end of the diaphysis perforated the posterior surface of the periosteum, thus explaining the great difficulty experienced in reducing cases of complete separation. They believe they have proven by their dissection that this band of periosteum would not interfere with reduction.

After the epiphysis is separated, if traction be made in the line of the limb, the epiphysis being attached by periosteum in front and pulled on by ligaments and muscles behind, will rotate on its axis so as to turn its articular surfaces directly forward: this being a position in which no amount of direct pressure will replace the epiphysis on the diaphysis; on the contrary, if the direction of the traction be gradually inclined backward until the pull is at least at right angles to the axis of the shaft of the femur, the epiphysis will be drawn across the fractured surface by the pull of the ligaments attached to the posterior half until the band of periosteum attached to its anterior margin checks this backward movement by coming in contact with the anterior surface of the femur.

This is their method of reduction, being devised so as to make the epiphysis retrace its step backward, to apply the separated periosteum to the anterior surface of the femur, to withdraw the end of the diaphysis from the popliteal space, and that, after these objects have been obtained, to so fix the limb that the displacement will not recur.

They have found the complete flexion—the heel on the buttock—as they at

first advocated is unnecessary, and that a wider angle, say of 60 degrees, is much more comfortable and just as efficacious.

The advantages arising from the maintenance of this position are: (1) That the quadriceps exerts tension in the length of the bone, keeping the surfaces in close apposition and squeezing effused blood; (2) the tendon of the quadriceps and of the patella fit into the groove between the condyles and thus prevents lateral displacement; and (3) that the tendon of this muscle changes its direction at a right angle to be inserted into the tubercle of the tibia, thus preventing a recurrence of the forward displacement.

The limb is maintained in this angle of flexion for about fourteen days, when it is extended and put in a plaster cast in a position of about 30 degrees short of the straight line.

The plaster should remain on for a couple of weeks, when it is removed, and massage finally restores the movements of the joint.

They have come to the following conclusions:

(1) That separation of the lower epiphysis of the femur is a very serious injury, attended with a high mortality, if compound.

(2) That in the extended position of the knee, even under anesthesia, reduction of the fragments is very difficult, if not impossible.

(3) That when the epiphysis is not reduced, the patient is laid up for about three months, and is lame for about another six months, whilst the end of the diaphysis frequently requires removal by operation. That shortening of the limb and secondary curves of the spine always follow.

(4) But that, nevertheless, the ultimate result of those cases that recover is good; the articular surface of the femur gradually grows into a useful position.

(5) That with the method of full flexion reduction is always easy, the treatment is short, and it is the rule to obtain perfect movement in the knee-joint without shortening or deformity of the leg.

THERAPEUTICS.

UNDER THE CHARGE OF

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AND

ARTHUR A. STEVENS, M D.

Urotropin in Cystitis.

Schiller (*Merck's Archives*, June, 1899) states that he has had occasion to employ this remedy in fourteen cases of cystitis in women. In four cases of gonorrheal cystitis the reaction was very prompt, the very troublesome tenesmus disappearing at once and the urine becoming decidedly clearer. The other ten instances were of cystitis of varying degrees of intensity, arising from different causes. A mild cystitis with urethral stricture responded promptly and without any treatment of the stricture. One case presented severe cystitis accompanying

uterine tumor, the uterus being retroflexed and the tumor through backward traction making the emptying of the bladder very difficult. The patient experienced no relief after the administration of about one drachm, and then withdrew from treatment. A third case with severe vesical hemorrhage, after ineffectual treatment with uva ursi and salol, reacted promptly to the first drachm and a half. The patient then discontinued the drug on account of its expense. Five lighter cases of unknown etiology all gave evidence of the antiseptic action of the urotropin. Schiller lays especial emphasis on the speedy remission of the pain. He recommends urotropin in cystitis, but considers that local treatment in addition will very often be found necessary. In the matter of dosage he adheres to the advice of Nicolaier, and gives seven and a half grains, three times a day; in one instance he was obliged to give only two doses a day, as three produced burning in the bladder. Complete cure through urotropin was observed after four to six drachms had been taken.

Treatment of Cardiac Asthenia of Pneumonia.

Elsner (*Therapeutic Gazette*, June 15, 1899) believes that we have too long limited ourselves to the consideration of the heart alone when administering to pneumonic patients, disregarding entirely the condition of the peripheral vessels, particularly the arteries.

Primarily we are dealing with a toxemia. This leads to the cardiac asthenia, in which we are likely to have not only marked changes in the right half of the heart, but far-reaching degenerative changes in the muscle, heart-clots, and vasomotor paralysis. To this must be added the obstruction in the pulmonary circuit. Fortunately the toxemia is short-lived, but its effect on heart and vessels is malignant, and when these suffer, the treatment must be radical, prompt, and sustaining.

He contends that all antipyretics, except cold, which suddenly depress temperature, do so at the expense of vital force, and are apt to rob the patient of needed resistance, or they may cause sudden and fatal collapse. The indiscriminate use of nitroglycerin is a growing evil with the profession in this country. Why should a drug be given that serves to lower still more the arterial tension? Nitroglycerin may have its uses in overcoming peripheral obstruction where the arteries are tense, sclerotic, or narrowed, against which the heart is laboring. But in pneumonia, where we already have paralysis of the vasomotors, it would seem from the experience of the past that nitroglycerin is a dangerous drug, in spite of the fact that one or two authorities of note have recommended it in this condition to relieve the overtaxed and dilated right heart; a condition which it would be far better to relieve by venesection, if all other methods fail, than by the use of a drug which causes still further paralysis.

There are two drugs which, when properly administered, meet the indications presented by the circulatory changes of pneumonia, due to paralysis of the vasomotor centres and the dilated condition of the arteries. These are strychnine and digitalis. They should be administered hypodermically, as when given in this way the results are more certain and prompt. Strychnine may be administered in comparatively large doses while the patient is being watched by skilled attendants. Digitalin may take the place of digitalis. He has been especially impressed with the value of diffusible stimulants administered at short intervals. He recommends the administration, every fifteen minutes, of fifteen drops each

of the compound spirits of ether, aromatic spirits of ammonia, compound spirits of lavender, and the tincture of valerian. This is kept up day and night until the pulse shows improved tone and the heart's action is decidedly better. The valerian is added because of its quieting effect when administered in these small doses with the diffusible stimulants. When valerian is not well received, pure whiskey or brandy may be substituted in corresponding doses. If Hoffman's anodyne is distasteful, it may be omitted, and the dose of the ammonia and lavender doubled. Elsner has further insisted upon the internal administration, every two, three, or four hours, according to the urgency of the symptoms, of one-quarter-grain doses of sparteine sulphate with from four to six grains of caffeine. Both of these drugs must be administered in larger doses than are usually prescribed, if desirable results are to be obtained.

The alcoholic stimulant upon which he depends is Tokay wine. He knows of no stimulant with which he has accomplished so much, and which in his hands has saved so many patients, as this Hungarian wine. This is given in tablespoonful doses every half hour, and with the ethereal stimulant when due. Occasionally it is necessary to use high rectal injections of coffee and whiskey and hypodermic injections of ether and oil during periods of collapse.

Guaiacetin in Phthisis.

Bass (*Präger medicinische Wochenschrift,* December 22, 1898) speaks favorably of guaiacetin in phthisis. Guaiacetin, like guaiacol, is a derivative of creosote. It appears as a white crystalline powder, having a faint odor and taste of creosote. It is administered in doses of four to six grains, three or four times a day. It may be taken as a powder or in a cachet and washed down with water. Bass has found it very useful in phthisis and chronic bronchitis. It stimulates the appetite, improves nutrition, and diminishes catarrhal secretion. Too much, however, must not be expected of it in advanced cases or in very active cases of a florid type.

Thiocol in Pulmonary Tuberculosis.

Maramaldi (*Therapist,* May 15, 1899) draws the following conclusions from his experience with thiocol in the treatment of pulmonary tuberculosis:

(1) Thiocol exerts a beneficial influence not only on functional, but also on anatomic alterations.

(2) In advanced cases, in which cavities were present, a more or less considerable improvement was obtained. Those who are still in the early stage of pulmonary tuberculosis may be completely cured.

(3) Thiocol acts in the following manner: The fever immediately abates, and within a few days ceases completely. Night-sweats also cease. (These effects are obtained even in advanced cases.) Cough and expectoration diminish, and then cease. On patients whose sputum shows, under microscopic examination, numerous bacilli of Koch and elastic fibres, thiocol produces a decrease of both; and when, at the beginning of the cure, bacilli were rare, they immediately disappeared.

(4) The pain in the chest, as a rule, very soon disappears. The general state of the patient improves. Appetite is excited. Strength returns.

(5) Thiocol has never produced any disorder in the stomach or the bowels. Nay, in some cases in which, at the beginning of the cure, there was some

trouble in digestion, it has disappeared under the influence of thiocol. By thiocol it is also possible to relieve the disorder of the bowels. The antiseptic action of thiocol is valuable against intestinal fermentations.

(6) The dose to be administered is from fifteen to forty-five grains per day. Whenever I have prescribed a larger dose than forty-five grains per day, the patient has always experienced intolerance to thiocol. On this point I cannot agree with Schwarz, who states that he has given as much as 150 to 225 grains a day. To recapitulate: I am firmly convinced that thiocol is a gem of modern therapeutics, and that it is destined to be of great service to physicians in the treatment of pulmonary tuberculosis. Among the patients that have been treated by me with thiocol, those who came in the *very early* stage of the disease, before cavities were present, have been *rapidly cured.* Patients in whom the disease was moderately advanced have likewise rapidly recovered. Of the very advanced cases, many have shown marked improvement, and many patients that I have declined to treat as being too far advanced, but who pleaded so hard for the treatment that I could not refuse, have impressed me by the wonderful improvement they have shown.

No other medicament produces such successful results. I consider myself, therefore, in duty bound to communicate these results to my colleagues, and to invite them to experiment and use thiocol in their practice in treating pulmonary tuberculosis.

[Thiocol is a derivative of guaiacol, but, unlike most compounds of the latter, is soluble in water. Chemically it is guaiacol-sulphonate of potassium, and appears as a white crystalline powder having somewhat the odor of guaiacol.]

Gelsemium in Influenza.

Boise, in a communication to the *New York Medical Journal* for June 17, 1899, states that during the recent epidemic of influenza he used gelsemium in nearly every case, and when he was called early the results were so uniformly successful that he was almost tempted to consider the drug a specific. In no case in which its use was begun early did pneumonic symptoms develop. In several cases of sudden and severe onset, and the physical signs of the first stages of pneumonia, with characteristic rusty sputum, all symptoms disappeared within thirty-six or forty-eight hours after treatment with gelsemium was instituted. He gives to adults one and a half or two drops of the fluid extract every half hour till the symptoms indicate that the full physiological effect is produced.

The Treatment of Pulmonary Tuberculosis by Subcutaneous Injections of Camphorated Oil.

Alexander (*Gazette hebdomadaire de Médecine et de Chirurgie,* and *New York Medical Journal,* June 17, 1899) says that camphor influences all the symptoms of pulmonary tuberculosis, and is thus one of the best agents in its hygienic treatment, inducing in about eight days the quieting of nervous troubles, headache, and insomnia. If continued longer, the congestive symptoms of the lungs disappear. In patients with fever Alexander injects daily *sub cute* from fifteen- to thirty-one-hundredths of a grain of camphor, or one to two Pravaz syringefuls of camphorated oil, continuing the treatment for from four to six weeks

without interruption, at the end of which time he ceases for from one to four weeks, resuming treatment later. When the fever has disappeared he raises the dose from forty-five- to seventy-five-hundredths of a grain during one or two weeks without interruption. This treatment is said to be always well supported, and even hemoptysis is not a contraindication. The author compares the value of camphor in lung-diseases to that of digitalis in heart affections.

Treatment of Coryza.

Burton (*British Medical Journal,* June 10, 1899) states that he has found by repeated experience that coryza can be aborted by using locally a solution of belladonna tincture in water. The strength used by him is one drachm or drachm and a half in one ounce of water. The method of using it is as follows: The nose having been well cleared out and a Wallas irrigator containing about a dessertspoonful of the solution applied to one nostril, close the other nostril and the mouth, and while gradually raising the distal end of the irrigator, make a long inspiration until the air, in bubbling through the solution, carries with it a coarse spray. Afterwards spray the other nostril in the same way, and then, having cleared out both nostrils, repeat the process. Thereafter the coryza will cease,—that is to say, if the treatment has been commenced on the first or second day of the attack. In cases of longer standing it may be necessary to repeat the application more than once or twice. When the coryza has lasted already some time, and consequently the mucous membrane has become thickly coated with a tenacious mucus, it is necessary to remove the latter by irrigations of alkaline solutions before using the belladonna.

Schleich's Infiltration Anesthesia.

Trzebicky (*Wiener medicinische Wochenschrift,* No. 13, 1899, and *British Medical Journal,* June 3, 1899) reports a series of 181 operations conducted under Schleich's method of anesthesia. The list of operations includes many formidable ones, and is as follows: Excision of dermoid and sebaceous cysts, 18; excision of tumors (excluding carcinoma), 33; operations on glands, 44; resections of rib, 10; radical operation for hernia, 36; laparotomies, some with resection of gut, 19; gastrostomies, 3; gastro-enterostomy, 1; jejunostomy, 2; cholecystotomy, 1; cystotomy, 1; radical operation for hydrocele, 1; castrations for enlarged prostate, 3; varicocele, 1; circumcision, 1; paronychia, 1; abscesses, 2; foreign bodies, 4; carbuncle, 1; and numerous teeth extractions. The solution employed was

Cocaine hydrochlorate	0.1;
Morphine hydrochlorate	0.02;
Sodium chloride	0.2;
Water	100.0.

The quantity used varied from five cubic centimetres to sixty-five cubic centimetres, the average in most operations being thirty to forty cubic centimetres. In nearly all cases the results were good and the operations painless. In five cases only was it found necessary to resort to chloroform during the operation. The object of the method is to render the whole field of the operation edematous,

and, as the skin is the most painful part, requires most attention. In removing tumors and glands the subjacent tissues must also be anesthetized. The duration of anesthesia was sufficient for operations lasting an hour. This method is not suitable for operations on carcinoma, or for trephining or removal of bones.

OBSTETRICS.

UNDER THE CHARGE OF

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ASSISTED BY

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The Indications for Chloroform during Labor.

Bacon (*Northwestern Lancet,* March 15, 1899) states that the sanguine diathesis gives patients who are usually large and florid, with muscles that are well developed. Arterial tension is high, and as age advances the heart has a tendency to hypertrophy and to fatty degeneration, and the muscles become inelastic. Young patients of this diathesis bear chloroform well, but it should be used less freely as age advances, unless hypertrophy of the heart and weakened blood-vessels are present. Strumous patients are defective in nutrition; the bones are frequently irregular; they have little or no adipose tissue, and are irritable, with weak muscles. A few drops of chloroform at infrequent intervals and during a pain will give these patients much comfort. Usually the fetus is small and the few drops necessary to relieve irritability will not increase the duration of labor. Dark, despondent women of the bilious diathesis are slender; their tissues are dry and inelastic; they are inclined to be whining, with little fortitude in pain. In these cases chloroform should be begun early in small, regular amounts, and the patient will soon become courageous and patient, and will eagerly follow instructions and assist the uterine contractions. These patients will insist that chloroform increases the strength of their pains, and the change in their demeanor would seem to corroborate their statements. The bilious frequently merges into the sanguine, and we have large, steady, persistent people with marked tendency during labor to rigid os and perineum. When the bilious merges into the nervous diathesis we find active women but great sufferers. Many of the chronic invalids are of this type. Both of these classes are benefited by the use of chloroform from the early stages of labor until the end; even, small, regular amounts, sufficient to relax spasmodic muscular action and relieve keen pain.

The bilious and lymphatic combination presents to us a helpless creature whose natural weakness is intensified by despondency. She has heard that chloroform makes her labor easy, and she insists upon having it early and in large quantities. The difficulty is readily overcome by liberal inhalations of alcohol. Chloroform should not be administered in normal labors with this type.

The sanguine diathesis is frequently blended with the nervous and bears chloroform well. When the strumous is blended with the nervous, chloroform can be used freely. When the strumous is merged into the sanguine, chloroform

can be exhibited freely, but should be watched more closely than in the nervous diathesis. When valvular lesions of the heart are present, the increase in the volume of blood and the increased engorgement of the vessels that occur during the uterine contractions become a source of danger. Without chloroform the heart's action becomes labored and irregular, and the patient's distress is great, but immediately upon its exhibition the vasomotor dilatation allows the patient to bleed into her venous system and the vigor of the uterine contractions is lessened. The excess of work thrown upon the heart is removed, and the relief to the patient is so evident that Bacon would as soon think of approaching one of these cases without aseptic precautions as without chloroform.

When disease of the blood-vessels is present, chloroform should be administered to relieve straining and lessen the danger of rupture. Albuminuria is benefited even though eclampsia is not present, when the albumin is due to reflex irritation or increased arterial tension, and under its influence certain French and German investigators claim that the amount of albumin excreted is diminished and sometimes disappears. When eclampsia occurs before delivery, the convulsions are controlled, the exhaustion and the danger to the heart and blood-vessels are averted, and the uterine spasms are checked, allowing normal contractions to occur.

In certain cases the pain is of such a character that labor is delayed, and chloroform at such times hastens delivery and prevents some dangers. In primiparæ, when pains are severe and the os dilates slowly, the patient becomes worried and weary, and nervous irritability and exhaustion follow. It sometimes happens that intense suffering inhibits proper contractions, and inefficient pains result. In abnormal uterine contractions pain sometimes becomes pathologic in intensity, as seen frequently in hysterical women. During the second stage, particularly if it is long continued, the vulva becomes swollen and irritable, and if the pains are severe, the patient frequently cannot be induced to strain. In all of these cases chloroform given to the obstetric degree takes the edge off from the pains and gives the patient courage; at the same time the intervals between pains are lengthened and the patient obtains rest. Chloroform should be used to control tetanus of the uterus, spasms of the cervix, and to relax a rigid perineum if due to reflex irritation, but it should be borne in mind that a rigid perineum is frequently but an indication of weakened uterine action. In precipitate labor, if the rigid condition of any portion of the birth-canal makes tearing probable, chloroform should be administered in quantities to lessen uterine force as well as to relieve pain. Forceps are applied usually because of uterine inertia, and chloroform should be used to relieve sensibility and allay reflexes, but the tendency to flood should be borne in mind and its use discontinued before delivery. During version, anesthesia is required for all sensitive patients. Without it the uterine muscles become tense as the hand pushes in, and sometimes the contraction becomes continuous; besides, the pain is intense and struggling frequently interferes with the necessary manipulation. It should be discontinued as soon as turning is accomplished.

It should be omitted only when the abdominal and uterine muscles are insensitive and when the cervix is dilated and flabby or when contraindicated by disease. Chloroform is useful in all cases where it is necessary to pass the hand into the uterus to change presentations.

In foot and breech presentations it is useful in unruly patients, but in the main the benefit as an anesthetic is doubtful, for the co-operation of the patient and the uterine pains are necessary assistants.

Artificial Feeding of Infants.

E. Schlesinger (*Therapeutische Monatshefte,* 1898) believes that good results in *artificial feeding* can only be obtained if the infant is placed under the same favorable conditions that exert a beneficial influence on the well-being of the child at the breast. This may be shown by a study of dietetics, which teaches us not only the kind of food to use, but also the quantity which is to be administered, according to the age of the child. This is the most important and most necessary factor. We do wrong, and make a mistake, in directing our attention solely to the method of feeding, and relegating the study of dietetics to a subordinate position. Every rational method of feeding may succeed if the rules of dietetics are borne in mind, and no method will lead to success when the principles of dietetics are continuously ignored.

The following is a *résumé* of the author's conclusions:

(1) Success in artificial feeding is based, in the first instance, on dietetics.

(2) Dietetics consist in: (1) The administration to the infant of an exceptional chemical and bacteriologically pure cow's milk, and (2) in rigidly adhering to the quantity of food which is physiological, and which takes into consideration the capacity of the stomach for a single meal, taking as a guide for the daily amount of food to be administered the capacity of a normally developing breast baby.

(3) The method of feeding is of subordinate importance, as compared with dietetics.

(4) The most rational methods of feeding cow's milk are those which yield the same value of nutrition as mother's milk.

GYNECOLOGY

UNDER THE CHARGE OF

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ASSISTED BY

H. D. BEYEA, M.D., AND H. L. WILLIAMS, M.D.

Stypticin in Uterine Hemorrhage.

Bolt (*Medical News,* April 8, 1899) writes that he has found stypticin to have considerable influence on uterine hemorrhage, but that it does not seem to influence the hemorrhage caused by uterine fibroids, cancer, endometritis fungosa, or that associated with endometritis in a retroflexed uterus. Even though four and a half grains were given it caused no unpleasant symptoms.

Stypticin in the Treatment of Uterine Hemorrhage and Dysmenorrhea.

Nassauer (*Centralblatt für Gynäkologie,* April 22, 1899), at a recent meeting of the Munich Gynecological and Obstetrical Society, reports his observations with this drug in the treatment of uterine hemorrhage and dysmennorrhea.

He believes that it does not act on the muscle tissue of the uterus, as does ergotine, but upon the vasomotor nerves of the genital tract. It is of much value in all uterine hemorrhages not caused by a gross lesion in the endometrium, nor is it useful in fungoid endometritis until after the endometrium has been removed by means of the curette. It also does no good in the hemorrhage following labor or abortion until every portion of the ovum has been removed. It does good in fibroid tumors of the uterus when the mucous membrane is intact. In these cases also it has a very pronounced effect upon the pain associated with the menstrual period, being able to relieve it entirely in some cases. In painful and profuse menstruation it relieves the pain and lessens the hemorrhage. It influences the hemorrhage caused by tumors of the tubes and ovaries, inflammation of the tubes and ovaries, the menorrhagia of chlorosis and phthisis, and profuse hemorrhage at the climacteric period. He advises, in order to secure quick results, that three grains should be injected into the gluteal muscles. Internally a pearl should be given every two hours, but not more than eight should be administered in the twenty-four hours.

Death following the Interuterine Injection of a Solution of Chloride of Zinc.

Schmid (*Monatschrift für Geburtshülfe und Gynäkologie,* Band lx, Heft 6, 1899) reports a case where the interuterine injection of a 50-per-cent. solution of the chloride of zinc was followed by death in eight hours. The case very much resembles that one reported by Hofmeier in the same journal in 1896. The patient was a married woman, 24 years of age, who had consulted him about two years before for a profuse burning leucorrhea. On making a vaginal examination he found that she had an endometritis, retroflexion of the uterus, and oöphoritis. She was then admitted to the hospital, and by the use of vaginal massage every other day, irrigation of the uterus with a mild antiseptic solution, and local applications, she was much improved and able to leave the hospital at the end of three weeks. After this treatment the uterus was movable, in the position of anteflexion, and the right adnexa seemed to have returned to normal. She continued well for a year and a half, and then came again for treatment of the endometritis. The uterus was again irrigated with a 1-per-cent. solution of carbolic acid and the cavity packed with iodoform gauze. Ten days later massage was again begun, local applications made, and every few days a vaginal tampon saturated with glycerin and ichthyol was introduced. Tincture of iodine was injected into the uterine cavity three times. She then left the hospital and continued the treatment in the out-patient department. The treatment practised here was the injection of a solution of ferripyrin on two occasions and a 50-per-cent. solution of the chloride of zinc on four occasions. To introduce the chloride of zinc solution a Braun injector was employed. The uterus was washed out with a mild antiseptic fluid after each injection, and the uterine cavity packed with iodoform gauze. She experienced no pain or other symptoms following the previous injections, and returned to the hospital regularly for treatment. The last injection of the chloride of zinc solution was practised as before, but after a few minutes the patient began to complain of severe pain in the lower abdomen, was unable to walk, and had to be admitted to the hospital. Ice was applied to the abdominal surface and opium administered internally. The pain was much relieved for a time, and she seemed to improve, then she began to slowly grow worse, becoming cyanotic

with a rapid and very feeble pulse, and died in collapse eight hours after the injection. At the post-mortem an acute peritonitis and perimetritis was demonstrable. Schmid concludes that the last injection of the solution of chloride of zinc had produced a peritonitis and perimetritis, which had rapidly resulted in the death of the patient. He believes that some of the fluid escaped into the tube during the injection. He advises that when such applications are made to the internal surface of the uterus, it should be accomplished with an applicator and not injections, as has been the custom.

PATHOLOGY.

UNDER THE CHARGE OF

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ASSISTED BY

DAVID RIESMAN, M.D.

Concerning Primary Phlebitis Obliterans of the Main Trunk of the Hepatic Veins as a Cause of Death.

Chiari (*Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie,* xxvi. Band, 1. Heft) calls attention to this interesting morbid condition hitherto scarcely recognized. There are only seven cases of obliterating phlebitis of the large branches of the hepatic veins on record, and in them the disease process was for the most part merely an extension of an inflammation from the surrounding tissues. Chiari's own three cases, which represent a primary phlebitis of these veins, are as follows:

The first patient was a woman, 23 years of age, who began to complain on December 20, 1884, of intermittent pains in the hepatic and gastric regions and loss of appetite. On January 1, 1885, the pains in the region of the stomach became very severe, and vomiting set in, both symptoms continuing until her death, fourteen hours later. The autopsy revealed intense pulmonary edema, ascites, enlarged spleen, and hemorrhagic erosions in the stomach and duodenum. The liver was much enlarged, its capsule tense, the surface smooth, and the substance mottled with yellow and brown. The branches of the portal vein presented nothing abnormal. The hepatic veins, on the other hand, from the point of entrance into the inferior cava up to the finest radicles in the liver itself, were distended and filled with thrombi, partly dark-red and partly grayish-red. The walls of the veins at their junction with the inferior cava were thick and fibroid, and in places the lumen was obliterated. On section the liver presented evidences of stasis-hyperemia with hemorrhages. The central veins were dilated and the walls thickened. There was no hyperplasia of the interlobular connective tissue. The walls of the large hepatic veins were thickened and had clots adherent to them. The proximal ends of the hepatic veins presented marked evidences of inflammation in the form of a proliferating endo- and periphlebitis. The lumen was greatly reduced, and the additional obstruction offered by the clots produced practically a complete closure of the mouths of the hepatic veins into the vena cava. The case was evidently one of a primary chronic inflam-

mation of the central ends of the hepatic veins. With an increase in the swelling of the intima, stasis arose in the territory of the hepatic veins and thrombosis. The latter coincided very likely with the onset of the pains twelve hours before death. The phlebitis was probably of syphilitic origin. In addition to a suspicious scar on the external genitalia, the histologic structure of the hyperplasia of the intima and adventitia was suggestive of syphilis.

The second case was a woman, 59 years old, who had had six children, five of whom had died in early youth. Two weeks before admission anorexia, general weakness, and swelling of the abdomen set in, and five days later edema of the left leg. Upon admission, the left femoral vein was found converted into a hard cord. The uvula and half-arches were reddened and covered with a whitish deposit. The thyroid gland was slightly enlarged. The cervical veins were dilated, as were also some of the veins of the thorax. The pulse was intermittent and dicrotic. The liver was enlarged, irregular on the surface, and its edge firm. There was ascites. The patient died suddenly from collapse. At the autopsy three and one-half litres of bloody serum were found in the abdominal cavity. The left femoral vein, left external iliac, and left common iliac were thrombosed. The lungs were partially adherent, congested, and very edematous. The left pulmonary artery contained numerous emboli. Projecting from the posterior wall of the left ventricle was a saccular aneurism the size of a hen's egg. The horizontal branch of the left coronary artery was obliterated. The obliteration extended up to the margin of the aneurismal sac. The liver was enlarged and firm and had a tight-lace furrow; the capsule was not thickened; the parenchyma was congested in places and reddish-black. The portal vein and nearly all of its branches were filled with recent clots. Similar clots were found in the hepatic veins. The openings of the main branches of the latter into the inferior vena cava were completely occluded by scar tissue. The spleen was twice the normal size, firm, and full of blood. The kidneys were slightly reduced in size, firm, and marked by scars on the surface. The mucous membrane of the stomach and small intestine was congested, and that of the large bowel, with the exception of the rectum, was the seat of hemorrhagic infiltration. Careful microscopic examination was made, but we reproduce only the features of special interest. The liver was the seat of marked atrophy from passive congestion. The central veins were thickened and dilated. Clots were found in the hepatic veins and many of the branches of the portal veins. The interlobular connective tissue was a little increased. The mouths of the hepatic veins were completely obliterated through hyperplasia of the intima. The adventitia was not altered. Towards the periphery the phlebitis disappeared rapidly. In this case, too, the phlebitis obliterans appeared to have been a primary disease; it had not developed as an extension from the surrounding tissues. Although a history of syphilis was not obtained, the obliteration of the coronary artery and the endophlebitis were suggestive of a syphilitic origin.

The third case was that of a woman of 29 years, who, in November, 1894, began to have pain and a feeling of tension in the hepatic region, followed by a swelling of the abdomen, belching, vomiting, and insomnia. The liver and spleen were enlarged, there was marked ascites, and the diaphragm was pushed up. The patient was tapped twice. On the last of December coma set in and death occurred on January 3, 1895. There was a history of gonorrhea, but not of syphilis. At the autopsy the liver was slightly enlarged, but flabby. The main branches of the hepatic veins were markedly thickened, and their mouths into the inferior cava were so contracted that only a probe could be inserted. In

addition to this, the lumen was still more encroached upon by recent thrombi. The lungs were edematous and the left lung contained several hemorrhagic infarcts. Microscopic examination showed that the ends of the hepatic veins were the seat of an irregular thickening of the intima, which extended peripherally for some distance, and in places had caused complete obliteration, even in the smaller branches. In this case, also, the obliterating phlebitis had caused the death of the patient. Although there was nothing in the history or in the anatomic findings suggestive of syphilis, the author suspects that this case was also due to luetic infection.

The three cases have a good deal in common. In the first place, there was in all a productive inflammation of the wall of the veins, an endophlebitis which, in the first case, was associated with a periphlebitis. The inflammation tended to obliteration, and was in all of the cases an independent process. Its consequences were the same,—namely, passive hyperemia, atrophy, and induration, and, secondarily, stasis in the territory of the portal circulation, with abdominal dropsy. The last, the ascites, was the cause of death in all three cases, inasmuch as by pressing up the diaphragm it led to pulmonary edema. A secondary consequence of the endophlebitis was thrombosis, and this played a most important part in that it caused such a marked disturbance of the circulation that the collateral circulation could no longer overcome it. Pronounced ascites was the result and led to death. Chiari considers the phlebitis obliterans of the main trunks of the hepatic veins as a disease *sui generis*, and believes that it depends upon syphilis.

Fragmentatio Myocardii.

Despite the considerable work that has been done on the subject of fragmentation of the myocardium, the exact significance of the process is still in doubt. The earliest writers, among them Renaut, considered that the process was of antemortem origin and played a part in the production of sudden death. Later writers, among them von Recklinghausen and Zenker, looked upon fragmentation as an agonic phenomenon produced by the spasmodic contraction of the heart. They denied that the process was a special disease, although admitting that certain conditions predisposed to fragmentation. Israel and Œstreich showed that the fragmentation occurred *through* the muscle-fibre rather than through the cement-substance between the fibres. The latter observer did not consider that fragmentation was a cause of death. Aufrecht adopted the view of Renaut. Hektoen is of the opinion that when general fragmentation is found in cases of arterial sclerosis, coronary disease, fibrous myocarditis, etc., that die suddenly, it is a satisfactory anatomic reason for the sudden fatal ending.

Streckeisen (*Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie*, xxvi. Band, 1. Heft) has just published a careful study of the subject, in which he deals with the frequency of fragmentation, its cause and significance. The heart, the seat of fragmentation, is soft and flaccid, the color is dirty yellowish-red, or grayish-yellow, if the patient has been ill previously, or brownish-red, grayish-brown, or grayish-red if the death was sudden. If the fragmentation is marked, the muscle is friable and cuts like soft butter. Lighter degrees and focal fragmentation can only be determined with the microscope. Microscopically, the process is characterized by the breakage or fracture of the muscle-fibres into smaller and larger pieces. Its distribution varies, and in mild

cases the foci are small and scattered. The papillary muscles are frequently affected, but their apices, where the chordæ tendineæ are attached, escape. It is worthy of note, also, that the muscle-fibres in the vascular connective tissue and in fibrous myocarditis the fibres in immediate contact with the sclerotic foci are not affected. The fragmentation may occur in all parts of the heart, but is most frequent in the papillary muscles. The auricles in Streckeisen's cases never showed any fragmentation. As regards the place where the fragmentation occurs, whether through the cement joining the fibres or through the fibres themselves, Streckeisen has found that, as a rule, the fracture occurs *through* the fibres and not between them. In old persons, however, there may in places be a disassociation at the points of juncture of the fibres. He never found, however, any pathologic material between the broken ends; the intervals were always empty. In cases of fatty degeneration of the heart, fragmentation was very rare; it seemed that fatty degeneration to a large extent excluded fragmentation. Pigmentary atrophy, on the other hand, seemed to predispose to the process, probably because it rendered the muscle-fibres more fragile. As to the frequency of fragmentation, it was found in eighty-five out of 150 cases in which the heart was examined (56.6 per cent.). In one case it occurred under the age of ten years (a 6-year-old child dead of traumatic tetanus). Infectious diseases and septic processes favor the occurrence of fragmentation. Among the causes of fragmentation, the mechanical factors possess great importance. The active contraction of the muscle-fibres is one of the chief elements in fragmentation; the latter depends upon a disproportion between the strength of contraction and the cohesive force of the muscle. Conditions which increase the one or diminish the other or act in both directions at the same time, bring about fragmentation. In cases of sudden death from suffocation the chief factor is the excessive muscular contraction of the heart. Passive stretching of the muscle-fibre may also play a part in the production of fragmentation. The absence of fragmentation in fatty degeneration of the heart is probably due to the fact that the degenerated fibre is not able to develop the contracting force requisite for the production of fragmentation. The active contraction of the muscle being of chief moment in production of fragmentation, it is not necessary to assume a previous injury or disease of the myocardium. Fragmentation is found in cases in which the death was so sudden that there was not time for the production of any considerable change in the heart-muscle. In all of the cases of sudden death studied by the author the actual cause of the death was suffocation, either from external mechanical causes or from internal cerebral processes; and he concludes that, in such cases at least, fragmentation is an accompaniment of asphyxia. In pure asphyxia, the exciting cause of the fragmentation is probably the general convulsion and the spasm of the muscles. This is probably the cause also in death by hanging. In death from hemorrhage the conditions are somewhat different. In this there is no rise in blood-pressure. All three forms of death, however, have in common the lack of oxygen in the circulatory centres of the medulla. This lack of oxygen probably induces spasmodic contractions in the heart and thus leads to fragmentation. The fragmentation occurring in the heart after previous disease, such as infectious disease, septicemia, etc., the author also attributes indirectly to a lack of oxidation. The last question dealt with is whether fragmentation can be accepted as an explanation of sudden death. Streckeisen believes that it is *not* the cause of the heart-failure, but a consequence of the latter. He looks upon it as an agneic process characterizing death from asphyxiation.

MISCELLANEOUS.

THE DIFFICULTY OF LOCALIZING PULMONARY LESIONS.

At the meeting of the Société Médicale des Hôpitaux, on January 27, M. Tuffier read a paper on this very important subject. At the Moscow meeting of the International Medical Congress he analyzed all the accessible cases (306) of pulmonary surgery. This prolonged study impressed one thing on him: that difficulties lay much more in insufficiency of diagnosis and in defective localization than in operative technique. Seventeen cases of pneumotomy which he performed confirmed this opinion. To attack a pulmonary disease efficaciously, its position and extent as well as its unity or multiplicity should be known. Of 221 cases diagnosis was incomplete in forty-five; in his own seventeen cases an error was committed in seven, although the patients had been examined by one or several of his most distinguished colleagues. If an error of diagnosis was of minor importance in abdominal it was of capital importance in pulmonary surgery. Hepatic abscess could be distinguished from purulent pleurisy only with difficulty. M. Tuffier had operated on a case of non-suppurating hydatid cyst supposed by a great number of his colleagues to be situated in the liver, but which he found to be entirely in the lower lobe of the right lung. It was necessary that the height and depth of a pulmonary lesion should be defined. In a case of hydatids the stethoscopic signs were supposed certainly to show the presence of a lesion in the upper two-thirds of the lung, but the cyst, as large as the fetal head and packed with living echinococci, filled the lower lobe alone. Radiography revealed no opacity in this position. In a case of gangrene the centre of the lesion was localized in the eighth intercostal space; the inferior extremity was found in the seventh. This error though small had entailed dangerous explorations. The depth of the lesion was still more difficult to define. M. Tuffier had operated on two patients in whom ausculation revealed cavities so superficial that pyopneumothorax was diagnosed without reserve. He had to penetrate more than a finger's breadth of lung to reach a pulmonary cavity. The mistake appeared to have been inevitable; the lung was indurated, lardaceous, and adherent to the chest wall. Such errors were not peculiar to his countrymen. In foreign literature he had collected ten examples in the case of pulmonary gangrene alone. In the *Lancet* of January 13, 1894 (p. 87), Priestley Leech had recorded

a case where multiple punctures failed to discover an abscess complicated by gangrene. Quincke opened one cavity, but the necropsy showed several. The extent of the cavity was still more difficult to determine,—a small cavity might simulate an enormous one. The diagnosis was especially difficult in bronchiectasis, where a series of small suppurating excavations would cause the same symptoms as would be caused by a large cavity. In one case the diagnosis was septicemia consecutive to a vast superficial pulmonary excavation at the anterior part of the lower left lobe. The incision showed several small cavities of the size of a walnut. If auscultation was powerless, so equally was puncture. The form of expectoration might lose its significance, especially in children, in whom the thorax was supple and all the bronchi could be emptied by a single effort, thus simulating the evacuation of a single cavity. The number of foci was of capital importance, but nothing was more difficult to ascertain. A man had abundant fetid expectoration. A focus of the size of the fist was opened by pneumotomy. The presence of a second focus was diagnosed as blood did not escape by the mouth while it escaped abundantly from the wound. Progress was made for a time but the septic symptoms reappeared. Though assured of the existence of a second focus search was in vain. The patient died, and a second cavity was found a little over an inch above the first in the midst of sclerosed tissue. Most errors had been made in reference to lesions of the inferior pulmonary lobe; they were much rarer at the apex. M. Tuffier did not mean to attack medical diagnosis; on the contrary, he found that it was usually exact and that error was exceptional. Radiography would no doubt prove of great value in the problem of localization.—*Lancet*, April 8, 1899.

Laryngeal Complications of Measles.

Fränkel (*Revue mensuelle des Maladies de l'Enfance*, October, p. 508) reports four cases of measles terminating fatally with laryngitis, in which the necropsies showed ulceration of the vocal cords and of the arytenoid region of the larynx, in some portions involving the structures down to the perichondrium and even the cartilage.—*Medical and Surgical Review of Reviews.*

BOOK NOTICES.

A Practical Treatise on Fractures and Dislocations. By Lewis Stimson, B.A., M.D., Professor of Surgery in Cornell University Medical College, N. Y., etc. New York and Philadelphia: Lea Brothers & Co., 1899.

The profession is familiar with the elaborate and classical work on these subjects published by the author in 1883 and 1888. Owing to the advancement of our knowledge of these injuries during the past ten years, and to the additional light on some obscure points resulting from the extensive employment of the X-rays during the past two years, but more particularly because of opportunities for very extensive observation at the Hudson Street Hospital, the author very wisely decided to recast the present work, so that it would present a more personal form. Historical matter and the discussion of conflicting opinions have therefore given place to positive and authoritative teaching. This change enhances the value of the work very much, especially for the general practitioner, who wants specific information particularly on the subjects of diagnosis and treatment. The portion of the book devoted to fractures will be seen to be almost wholly rewritten. Following a brief introduction, there are chapters on pathology, etiology, symptoms, and diagnosis, repair and clinical course, complications and remote consequences, treatment, delayed union, faulty union, non-union, and general prognosis. The statistics of 4539 fractures treated at the Hudson Street Hospital show that, the phalanges excepted, the ribs are most frequently broken, while Colles's fracture of the radius stands next in order. Massage is mentioned under the treatment of fractures in general, but it does not seem to have received the attention its importance warrants,—not as a method of treatment alone, but as an adjunct to the usual procedures. In the opinion of many, this addition to the treatment serves a most useful function in shortening the period of disability after union has occurred, and in restoring the part to full normal function much earlier than would otherwise be the case.

A very conservative view is taken, and we believe very properly, with reference to the ambulatory treatment of fractures of the lower extremity. Of the treatment of simple fractures, difficult of reduction or complicated in other ways, by open incision, the author says, "I am convinced that generalization of the practice would lead to more harm than good." It is, however, admitted that certain cases are appropriate for this method. We are also inclined to agree with the author on this point, for, as he justly says, "although the probability that such an operation in experienced hands and under proper precautions would be followed by disaster is small, yet the evils of such a result, if it should follow, are greatly in excess of those resulting from the persistence of the displacement."

There is but little to say of the consideration given to special fractures, save that it seems to represent the best teaching of to-day. We miss, however, reference to the method of treating fractures in the neighborhood of the elbow-joint by retaining the hand of the injured side on the opposite shoulder, as advised by Mr. Jones, of Liverpool. This method has given us very great satisfaction.

Dislocations have received the same careful discussion given to fractures. Dr. Stimson's new work will stand as an authority on the subjects of which it treats for many years.

The mechanical execution of the work is up to the standard of this well-known publishing house. The illustrations are numerous and include many reproductions of skiagraphs illustrating the subjects.

Hay Fever and its Successful Treatment. By W. C. Hollopeter, A.M., M.D., Clinical Professor of Pediatrics in the Medico-Chirurgical College, Philadelphia. Second edition, 12mo. P. Blakiston's Son & Co.

The sale of one edition in one year shows that a successful treatment of hay fever is greatly to be desired. The author does not pretend to solve the problems of the cause of the disease and its *modus operandi*. He suggests a micro-organism or a toxin. Whatever the *materia peccans* is, the successful treatment of this disease will undoubtedly place the author in a very enviable position. We have ourselves found some difficulty in carrying out the prescribed plan of "scrubbing most carefully and gently every portion of the mucous membrane, being sure to reach in between the turbinated bones and all around and over every slight prominence." For this purpose an excellent formula for Dobell's solution is given. Then follow drying with cotton and an application of menthol, eucalyptus, camphor, and alboline. However, hay-fever patients must be treated, and great judgment, tact, and patience are required in handling them. They become neurotic, are an easy prey to cocaine, suffer often greatly at the hands of nasal surgeons, and make their friends and relatives miserable by their idiosyncrasies. We hope that Dr. Hollopeter will continue to relieve these unfortunates.

Diseases of Women: A Treatise on the Principles and Practice of Gynecology. For Students and Practitioners. By E. C. Dudley, A.M., M.D., Professor of Gynecology, Northwestern University Medical School, etc. With 422 illustrations, of which 47 are in colors, and 2 colored plates. 637 pages. Philadelphia and New York: Lea Brothers & Co., 1898.

Dr. Dudley has written a book which is eminently practical and at the same time compendious and readable. Probably the most striking innovation is the preservation of the anatomy of each patho-

logic process, as it may consecutively affect the different pelvic organs. This has been accomplished by abolishing the usual division into chapters, and adopting, instead, a classification on pathologic lines, so that the entire work is grouped under five headings, as follows: (1) General Principles; (2) Inflammations; (3) Tumors, Malformations, and Tubal Pregnancy; (4) Traumatisms; (5) Displacements and Pelvic Massage. Undoubtedly such a classification affords a better grasp of the sequence and significance of each pathologic process. Special attention should be called to the large number of illustrations, and especially those under perineorrhaphy, cervical laceration, vesico-vaginal fistula, and tumors and displacements. The relations of dress to the health and diseases of women are considered in full, and rightly hold a prominent place in the book. The text is concise and clear and the manner taking. Diagnostic tables are inserted here and there throughout the book, and the methods of treatment recommended are the most modern and useful. The author has succeeded in preparing a book of much value and one that does credit to his large experience as a clinician and medical instructor.

A Manual of Venereal Diseases. By James R. Hayden, M.D., Chief of Clinic and Instructor in Venereal and Genito-Urinary Diseases, College of Physicians and Surgeons, New York, etc. New York and Philadelphia: Lea Brothers & Co., 1898.

The present edition of this little volume is similar in plan and scope to the first. Such changes have been made as the advances in these departments demanded, and a general revision improved the work as a whole. New illustrations have been added, and a new chapter on the care and use of urethral instruments has been included.

This book is prepared especially for students and practitioners, and it cannot fail to find a large field among these classes of the profession, as the subjects are treated in a plain and concise manner without confusing the mind with unnecessary matter. The views expressed throughout are in accord with the best teaching on the respective subjects. Exception might be taken to the directions given for the constitutional treatment of syphilis. No consideration seems to have been made for the varying degrees to which different individuals are susceptible to antisyphilitic remedies, especially mercury. If the treatment consists in taking one one-third-of-a-grain pill of the protiodide of mercury, three times daily, for a certain number of months, the services of a physician are quite unnecessary after the diagnosis has been made and the treatment inaugurated. Do we not find in practice, however, that the dose must be increased in some individuals on account of the unusual persistence of certain manifestations, or reduced in other cases owing to a marked sensitiveness of the system to the drug, and that the best results are obtained by carefully observing this relation at frequent intervals, and keeping the dose of mercury just within the limit of tolerance?

Those who wish a fuller exposition of these subjects must nat-

urally look to one of the larger and more pretentious volumes, but as an epitome Dr. Hayden's book will be found in every way satisfactory.

THE SEXUAL INSTINCT: ITS USE AND DANGERS AS AFFECTING HEREDITY AND MORALS. By JAMES FOSTER SCOTT, B.A., M.D., late Obstetrician to Columbia Hospital for Women, and Lying-in Asylum, Washington, D. C., etc. New York: E. B. Treat & Co., 1899.

"If it is possible to perfect mankind, the means of doing so will be found in the medical sciences." This quotation from Descartes, which the author of this book has placed before the preface, seems to be a particularly appropriate introduction to a work of this kind. For, while we are told that this volume is "intended primarily and mainly for lay*men*,—not for women or boys,"—the voice and influence of physicians will do more to correct the abuses against which the author writes so forcibly than any other means.

The design of this work, we are told in the preface, is to furnish the non-professional man with a sufficiently thorough knowledge of matters pertaining to the sexual sphere,—knowledge which he cannot afford to be without.

The view that the masses should be given instruction on this subject which shall be correct is being accepted by more and more of those most competent to judge each year. In the past the laity have either remained ignorant or, still worse, have been misinformed by the literature of quacks. It is a trite statement to say that the most prompt and efficient means of correcting any evil is to educate those who are concerned, but it is a fact that will bear repetition.

We believe, therefore, that Dr. Scott has rendered the human race a very real service, and it would be well, indeed, for the future generations if every man in the land would read the book through carefully. As the author says: "The older we grow the more we must realize how important it is to start out aright." It is the young men particularly, therefore, into whose hands this work should be placed. There is a small proportion of people who are instinctively and hopelessly depraved, but the great majority err more from ignorance, and the information to be obtained from this book cannot but be a help to all of these.

Some may object to some of Dr. Scott's views as being too ideal, and yet, if any case has been overdrawn, it has been done to be the more impressive. The underlying facts are indisputably true.

We heartily commend the work not only to the class to whom it is dedicated, but particularly to physicians, teachers, and all who are in a position to give instruction to those needing it; and while the author says it is not intended for women, it could not but prove most helpful to mothers in enabling them to guide their children more intelligently than they could without the information contained in this volume.

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SEPTEMBER, 1899.

AN ADDRESS COMMEMORATIVE OF THE TWENTY-FIFTH ANNUAL MEETING OF THE AMERICAN NEUROLOGICAL ASSOCIATION.

By Wharton Sinkler, M.D.,

PHILADELPHIA.

A quarter of a century ago a few men, who were especially interested in nervous diseases, came together, and created an organization which was destined to become known throughout the length and breadth of the land. There had already been formed two national societies of specialists,—the American Ophthalmological Association, in 1864, and the American Otological Association, in 1868. The New York Neurological Association had been framed in 1872, and was already a flourishing and active body of representative men. It seemed fitting that a national society of neurologists should be organized, and this was the motive which prompted the issue of the following call on December 15, 1874:

"It is contemplated to institute a society, to be called 'The American Neurological Association,' to be devoted, as its name imports, to the cultivation of neurological science in its normal and pathological relations. The number of members not to exceed fifty.

"The Association will meet annually, and continue in session several days.

"It is proposed to hold the first meeting in the city of New York, on Wednesday, the second day of June, 1875.

"You are respectfully invited to participate in this meeting for

[1] Delivered at Atlantic City, N, J., June 25, 1899.

organization, and to signify your acceptance or declination of this invitation to either of the undersigned at your earliest convenience."

This was signed by the following well-known names: William A. Hammond, M.D., Roberts Bartholow, M.D., Meredith Clymer, M.D.. J. S. Jewell, M.D., E. C. Seguin, M.D., J. J. Putnam, M.D., T. M. B. Cross, M.D.

Those who accepted the invitation were: S. Weir Mitchell, Philadelphia; J. K. Bauduy, St. Louis; F. D. Lente, Cold Spring, N. Y.; J. J. Mason, New York; John C. Shaw, Brooklyn; F. P. Kinnicut, New York; A. D. Rockwell, New York; D. B. St. John Roosa, New York; A. McL. Hamilton, New York; S. G. Webber, Boston; D. F. Lincoln, Boston; E. G. Loring, New York; J. C. Dalton, New York; E. R. Hun, Albany; J. S. Lombard, New York; E. H. Clarke, Boston; H. D. Schmidt, New Orleans; S. M. Burnett, Knoxville, Tennessee; John Van Bibber, Baltimore; J. W. S. Arnold, New York; Robert T. Edes, Boston; N. B. Emerson, New York; T. A. McBride, New York; F. T. Miles, Baltimore; William Pepper, Philadelphia; H. C. Wood, Philadelphia; Walter Hay, Chicago; H. M. Bannister, Chicago.

These, with the signers of the call, made a total of thirty-five original members.

The first meeting of the association was held in New York, at the New York Academy of Medicine, on June 2, 3, 4, 1875. The members who were present at this meeting were Drs. Clymer, Hammond, Jewell, Cross, Lente, Mason, Kinnicut, Rockwell, Hamilton, Webber, Lincoln, Hun, Van Bibber, Emerson, MacBride, Hay, and Seguin. The Committee on Nominations recommended Dr. S. Weir Mitchell for president, Dr. Jewell, of Chicago, for first vice-president, and Dr. Seguin for secretary and treasurer. Dr. Mitchell, on being notified of his election, wrote that, as he was unable to attend the meeting, he begged to withdraw his name from the list of officers. Dr. Jewell was therefore unanimously elected president, and filled the office for the year 1875–76 with much grace and satisfaction. Dr. Jewell was re-elected president for three successive years.

It is noteworthy that, at the time of the organization of the American Neurological Association, there were but two neurological associations in Europe, both of them being in Germany, and the London Neurological Society, the only representative body of neurologists in Great Britain, was not created until 1886. The attendance at the first meeting was good, and a number of interesting and valuable papers were presented. Dr. Meredith Clymer, for the Committee on Organization, submitted a draft of the constitution and by-laws, which was adopted with slight modifications. With a few changes, the same

by-laws are still in force. The first paper presented was by Dr. Webber, of Boston, entitled "Contributions to the Study of Myelitis." This paper was discussed with a great deal of interest and spirit by a number of the members. The question incidentally raised by Dr. Webber in his paper, as to the existence of congestion of the cord, brought up a very lively discussion. Dr. Hammond, whose views on congestion of the cord were at that time well known, defended the position, while Dr. Seguin thought it doubtful as to whether it was possible to recognize and define such a condition. Dr. Putnam held much the same view as Dr. Seguin, while Dr. Clymer expressed his belief as to the existence of spinal congestion.

A long and exceedingly thorough paper on the "Structure of the Nervous Tissues" was presented by Dr. Schmidt, of New Orleans. It is of interest to note the prominence given at that time to reflex irritation as a cause of nervous diseases. Dr. Jewell recorded a case of zoster, which was not only extensive but exceedingly painful, and did not get well until the uterus was treated and cured of some disorder. Dr. Hay, in this connection, referred to a case of zoster associated with severe neuralgic pain in the hip and testicle, which was cured when the sufferer began to wear suspenders, having previously been in the habit of wearing his trousers without them. Dr. Putnam recorded an interesting case of analgesia, following typhoid fever, and this was probably one of the earliest contributions to the subject of typhoid neurosis. A number of other important papers were read, including one by Dr. Hay, of Chicago, on "A Case of Hemiplegia, with Clot on the same Side of the Head." A note upon the "Clinical Effects of Conium," by Dr. William Pepper; "The Structure and Functions of the Ganglia of the Posterior Nerve-Roots of the Spinal Nerves," by Dr. J. S. Jewell; "Contributions to the Study of Basal Meningitis," by Dr. T. A. McBride; "Insanity in Children following Masturbation," by Dr. F. K. Kinnicut; "Tables showing the Results of the Use of Phosphorus in Neuralgia and other Painful Affections," by Dr. N. B. Emerson; "Fracture of the Odontoid," by Dr. E. R. Hun, and "Neuralgia and other Neuroses arising from Cicatrices of the Scalp," by Dr. F. D. Lente.

The proceedings of the association for the year 1875 were published in a handsome volume, under the editorship of Drs. Kinnicut and McBride. The following year no volume was issued, owing to lack of funds, but in 1877 individual members subscribed $350, and the transactions of 1876 and 1877 were published in one volume. From 1877 until 1881 no transactions appeared in book form, but were printed in the *Journal of Nervous and Mental Diseases*, of which Dr. J. S. Jewell was the editor. From 1881 until 1887, inclusive, a small

pamphlet was issued each year, being a reprint from the *Journal of Nervous and Mental Diseases.* In 1888 Dr. Graeme M. Hammond, for many years our genial and efficient secretary, who was then editor of the *Journal of Nervous and Mental Diseases,* published a volume of transactions, and presented it to the association. Since then a volume has been issued every year.

It is impossible in the brief time at my disposal to make anything but a passing allusion to the papers in the *Transactions of the Association.* Suffice it to say that every issue contains essays of the very highest order, and bearing upon subjects of the greatest importance. Every advance in neurology has been chronicled in papers, and many essays of original research are to be found in the *Transactions.* At a time when cerebral localization was in a crude and undetermined state, contributions by Seguin, Mills, Amidon, Putnam, Prince, and others, did much towards establishing the subject on a firm basis.

Of the thirty-five original members, fifteen have died, and of the remaining twenty but seven are now on the list of active members. Thus does time make changes. Of the original members, there were several who were oculists and other specialists, and who were merely interested in neurology incidentally. Several of these resigned after the first year or two. For example, Dr. Roosa, Dr. Cross, Dr. Kinnicut, and others. Dr. W. A. Hammond, who was mainly instrumental in the organization of the association, and through whose efforts it was kept alive and active during the first few years of its existence, is an honorary member, as is also Dr. Weir Mitchell. Dr. N. B. Emerson, now living at Honolulu, S. I., Dr. J. S. Lombard, of Upper Norwood, Eng., and Dr. J. J. Mason, of Newport, R. I., are associate members. It was originally proposed to limit the membership of the association to fifty, it being thought that better work would be done by a smaller number of men, but so popular did the association become that it was decided, a few years ago, to increase the membership to one hundred, and we now have ninety-one members. The council has recommended for election to active fellowship, at the present meeting, six additional members, and there are nine candidates on the waiting list. This surely shows a healthy condition of affairs in our association. The following is a list of those who have served as president of the association to the present time: J. S. Jewell, Chicago, 1875–76–77–78; F. T. Miles, Baltimore, 1879–80; Roberts Bartholow, Philadelphia, 1881; William A. Hammond, New York, 1882; Robert T. Edes, Washington, 1883; Isaac Ott, Easton, 1884; Burt G. Wilder, Ithaca, N. Y., 1885; Charles K. Mills, Philadelphia, 1886; Landon C. Gray, New York, 1887; J. J. Putnam, Boston, 1888; E. C. Seguin, New York, 1889; E. C. Spitzka, New York, 1890; Wharton Sinkler,

Philadelphia, 1891; C. L. Dana, New York, 1892; Henry M. Lyman, Chicago, 1893; B. Sachs, New York, 1894; Philip Coombs Knapp, Boston, 1895; F. X. Dercum, Philadelphia, 1896; M. Allen Starr, New York, 1897; Graeme M. Hammond, New York, 1898; James Hendrie Lloyd, Philadelphia, 1899.

This association has not only been ever foremost in scientific advance, but has been prominent in all matters of public interest to the profession at large. It was one of the first to respond to the call for the formation of a Congress of American Physicians and Surgeons, and has always taken an active part in its proceedings. The social side of the meetings has been a marked feature. Friendships have been formed among the members which have not only been most pleasant, but have proved of advantage in many ways to those concerned. Let no one imagine that the proceedings have always been as serene and placid as the surface of a lake on a May morning. On the contrary, there has seldom, if ever, been a meeting when some spice has not been injected into the discussions, which has made matters distinctly animated, and at times some rather stormy scenes have been enacted. Nevertheless, good feeling and friendship have in the end prevailed, and a strong *esprit du corps* has always existed; nor do I deprecate the spirit which has been shown in the discussion of papers, for without this the proceedings would be dull and insipid. The meetings, which were held in New York, Philadelphia, and Boston, proved peculiarly pleasant, and there is not a member who can look back upon them without a cloud of agreeable memories floating through his mind.

Great strides have been made in neurology during the lifetime of this association. These have concerned themselves, not so much with the gross anatomy of the nervous system, but rather with its minute microscopic anatomy and physiology, and especially with its cytology and its tracts. A conspicuous place has been given to the treatment of diseases, and, after all, what is more important than this; should we expend all our energies upon learning the effects of disease upon the nervous tissues? The final object of all research should be to become so acquainted with the causes and effects of diseased processes that they may be prevented or relieved. Cerebral localization has been firmly established upon a secure and ever-widening base, and the growing superstructure has been amply sustained. In the development of cerebral localization the names of Hughlings Jackson, Fritsch, Hitzig, Horsley, Ferrier, Mott, Beevor, Munk, Charcot, and Wernicke, in Europe, and in this country, Seguin, Spitzka, Starr, Mills, and Dana conspicuously stand forth. Great advances have also been made in spinal localization, so that, with our existing knowledge, a careful study of

the symptoms in a given case of disease of the nervous system will, in a large preponderance of instances, lead to a correct diagnosis, in both the pathological and localizing stand-point. I need say no more than that such diagnosis is essential for intelligent and successful treatment. Not only have the original observations of Broca, with relation to the centres for articulate speech, been confirmed and amplified, but centres have been isolated for all of the more important movements of the body, and the attempt has been made to demonstrate centres for other peculiar functions, such as a naming centre, a geographical centre, and a writing centre. In this connection it must be borne in mind that so-called centres cannot be looked upon as a fixed and definite area of cortical gray matter, but rather a collection of ganglion-cells of varying number and extent, in accordance with inherited anatomical peculiarities and acquired educational, developmental qualities.

A number of important papers on spinal localization have been published by members of this association. Notably are those of Starr, Mills, Eskridge, and Lloyd. As a direct outcome of the advances in cerebral and spinal localization, tumors, abscesses, blood-clots, exostoses, meningeal thickenings, etc., have been successfully operated upon in a number of cases. The surgeon has co-operated with the neurologist in the division and exsection of nerves and ganglia for painful and other disorders. The first operation for the removal of a brain tumor was done on a patient of Dr. A. Hughes-Bennett, of London, by Dr. Rickman J. Godlee, on the 25th of November, 1884. The patient died a month later from septic meningitis, but the success which attended the removal of the growth proved a stimulus to other operators. Within a short time a number of other successful brain operations were done by MacEwen and Horsley, in England, and Keen, Weir, and Bradford in this country; and tumors of the cord have been removed by MacEwen and Abbe. A paper presented by Dr. James Hendrie Lloyd, in conjunction with Dr. John B. Deaver, at the First Congress of Physicians and Surgeons, in Washington, in 1888, on "Trephining in Focal Epilepsy," was one of the earliest papers on this subject. The case recorded was probably the first attempt at practical cerebral localization by electrical exploration of the motor cortex in the human subject, and was confirmatory of Ferrier's experiments on the monkey.

One of the most important advances in neurology consists of the conception according to which the nervous system is made up of units, each of which comprises a cell and its processes, the neuron, not yet, however, capable of actual and final demonstration. This hypothesis simplifies our understanding of many complex processes in the physiology and the pathology of the nervous system. Such progress in

neurology as has been briefly indicated has been made in part by clinical study, conjoined with post-mortem investigation by experimental investigators, and by studies of the fetus in various stages of development. A most important aid has been found in the refinements that have been effected in the methods of staining, without which much of our knowledge of fibre-tracts and degenerations could not have been acquired. Among those who have contributed largely to this field may be mentioned the names of Weigert, Golgi, Nissl, Cajal, Berkeley, Upson, and Van Gieson.

In 1886 acromegalia was described by Marie, and the dependence of its symptoms upon disease of the pituitary body seems almost established. The hypophysis is thought to possess an internal secretion that exercises an inhibitory activity upon growth, especially of bone, and loss or suppression of which results in increased size of certain parts of the body, as seen in acromegalia. Several members of this association have written valuable papers on acromegalia, notably Dana and Hinsdale.

Although myxedema and cretinism have long been known, at least since 1870, it is only within the present decade that these disorders have been brought under the control of the therapeutist, and with pride be it said, is the result of a line of experimental investigation that is remarkable for its scientific sequence and execution. The observation that removal of the entire thyroid gland gave rise to symptoms of myxedema, and that this could be prevented by retention of a portion of the gland, or its transplantation, led to the administration of the thyroid gland of the sheep by the mouth, and subsequently to the preparation of glycerin and other forms of extract, which have proved of specific value in the treatment of the two diseases named, and of service in that of other diseases, such as melancholia and obesity. Osler, Starr, and other members of the association, have written valuable papers upon myxedema and cretinism, and their successful treatment by thyroid extract. It is worthy of note, in this connection, that the use of other animal extracts, for example, those of the brain, spinal cord, and other organs, have not met with favor in the association.

The department of neurology, together with other branches of medicine, has felt the impulse transmitted by the progress in bacteriology, and its offspring, serumtherapy. The discovery of the bacillus of tetanus has made possible the production and use of antitoxic serum, which has been employed by both subcutaneous and intradural injection. Acute anterior poliomyelitis of childhood is now looked upon as an infectious disease, although the causative microbe has not yet been isolated. Several epidemics of this disease have been carefully reported, one of which has been detailed by our fellow-member, Dr. John

Madison Taylor. Landry's paralysis is also suspected to be of infectious origin, and, indeed, many other neuroses are explainable only on the theory of infection.

During the period under review, neuritis has been gone over anew, and, apart from pressure, traumatism, or direct physical agencies, most, if not all, varieties of this disorder are looked upon as of toxic origin, induced by poisons introduced from without, or generated within the body, such as lead, alcohol, mercury, or those of uremia, diabetes, and diphtheria. Multiple neuritis was unsuspected twenty-five years ago, and the recognition of this disease, especially the alcoholic form, has enabled us to cure many cases which would have been doomed to die. Chorea is considered a disease of toxic character, and probably dependent upon bacterial invasion, although the causative agent has not yet been discovered. "Hereditary chorea," or "Huntington's chorea," has been shown by Dana to be dependent upon degenerative changes in the cerebral cortex, while so-called "habit chorea" or "habit spasm" is believed by many to be a form of convulsive or spasmodic tic, varieties of which have been described by our fellow-member, Gray, under the name of "palmus." Epidemic cerebro-spinal fever has been proved to be dependent upon a specific micro-organism, the diplococcus intracellularis meningitidis, and an excellent study of the disease in its clinical and pathological aspects has been made in the past year by Counselman, Mallory, and Wright. The pathology and symptomatology of syringomyelia have been exhaustively worked out, and it is now thought that the affection described by Morvan, and called by his name, is but a variety of this disease. Papers by Starr, Dercum, Lloyd, Hinsdale, and myself have added many new cases to this malady, which, ten years ago, had not been recognized except on the post-mortem table.

Family periodic paralysis has been described within the past five years. One of the most comprehensive communications upon the subject having been read by our fellow-member, Wyllys Taylor, and an important paper on the same subject has recently been read by our newly elected member, Dr. John K. Mitchell. The disorder known as asthenic bulbar paralysis has been described by our European *confrères*, and has also been studied by Joseph Collins and Berkeley. One of the most important contributions to the etiology and pathology of cerebral spastic paralysis has been made by an American physician, Sarah J. McNutt, a member of this association, and the subject of neurasthenia, although previously referred to in the literature, has had its most ardent exponent in the late George M. Beard, one of the early members of the association. So, too, the so-called traumatic neuroses, to which attention has been given of late years in Europe, by Oppen-

heim and others, have been ably treated by Knapp, Price, and Dercum. Erythromelalgia is the child of our most distinguished honorary member, Weir Mitchell, and the most important contributions have been recently made to its pathology by Spiller and Sachs. Muscular dystrophies have been described, and the subject elaborated in Europe, by Erb, Déjerine, and Landouzy, and in this country by Sachs, Spiller, and others. Lloyd has published some valuable papers on cases of injury to the spinal cord, which present the syringomyelic type, and demonstrate the course of the sensory fibres in the cord.

The subject of hysteria has been greatly elaborated in the past twenty-five years, and its symptoms are no longer looked upon as manifestations of simulation or of the imagination, or as occurring only in women, but are real and constant as those of any other recognized disease.

It has been impossible to give due credit to all of the members who have contributed papers on leading subjects in neurology, but a search through the literature shows that there has been extraordinary activity in neurological matters among the members of the association. A number of monographs and text-books on nervous diseases have been written or edited by members of the association. Notably among these are "Spitzka's Work on Insanity;" Starr's "Familiar Nervous Diseases;" Dana's "Text-Book on Nervous Diseases;" Riggs's "Translation of Edinger;" Gray's "Text-Book on Nervous Diseases;" Dercum's "American Text-Book of Diseases of the Nervous System;" Mills's "Nervous System and its Diseases;" "Diseases of the Nervous System and their Diagnosis," by Horatio C. Wood; Collins's "Translation of Jakob's Atlas;" Hamilton's "Diseases of the Nervous System;" Herter's "Diagnosis of Nervous Diseases;" Peterson and Church's "Nervous and Mental Diseases;" Sachs's "Nervous Diseases of Children;" S. Weir Mitchell's "Clinical Lectures on Nervous Diseases," "Injuries of Nerves," and other monographs; Osler's "Text-Book on Practice of Medicine," and numerous monographs.

Were I to undertake to publish a list of all the papers written by members of the association, it would fill a book larger than the first volume of our *Transactions*, and it would take more time to read than is allotted to the whole meeting.

Should the advances in neurological science, as well as in the treatment of nervous diseases, be as great in the next twenty-five years as they have been in the past, how different will be the practice of neurology in the future!

Methinks I can hear, in the next twenty-fifth anniversary address, the then venerable Dercum describe how he has seen, in the living brain, with some new instrument of precision, the neurons, holding out

their tiny hands to one another, and clasping and unclasping them, thus making and breaking consciousness. Is there anything more improbable in this than the achievements of skiagraphy would have seemed twenty-five years ago? Let us hope that all of us may assemble at the end of another quarter of a century, and hear this, as well as many more remarkable things.

CANCER OF THE COMMON BILE-DUCT.[1]

By John H. Musser, M.D.,

PHILADELPHIA.

Seven weeks before the death of the patient (which took place on the 24th of October, 1898) from whom these specimens were removed, she became slightly jaundiced, and at the same time had some nausea and vomiting, with loss of appetite. Prior to this time she was depressed and worn, on account of the long illness and death of a sister from cancer of the breast. Otherwise there was not noted any change in her physical condition. The onset of the jaundice was accompanied by the usual symptoms, but unattended by pain, either constant or paroxysmal, in the region of the liver or gall-bladder. She consulted a physician, who very properly thought she was suffering from catarrhal jaundice. From this time the jaundice increased very gradually in intensity, but never became more than a deep lemon-yellow hue of the skin. In a short time itching became a prominent symptom, and continued until her death. She consulted the writer about ten days prior to death, when the above conditions were noted, and it was ascertained that she lost a moderate amount of flesh only, scarcely perceptible, however, to her intimates. The muscles, however, became flabby, and she was weak, although able to attend to routine household duties and consult her physician at his office.

The local examination disclosed at this time enlargement of the liver, the lower border extending two inches below the margin of the ribs and four and one-half inches below the xiphoid cartilage. The enlargement was uniform and painless. Above the level of the umbilicus, in the midclavicular line, the apex of a globular mass was readily felt. It was smooth, about the size of an orange, freely movable, and without doubt was an enlarged and distended gall-bladder. There was no epigastric tenderness, but the patient complained of fulness after

[1] Presented to the Philadelphia Pathological Society.

eating. She suffered from anorexia, with nausea coming on a few moments after eating, and with flatulence, which was more marked after solid food, and was mostly intestinal. The bowels were constipated, and the stools clay-colored. The urine contained a trace of albumin, but exhibited no other evidence of renal disease, and showed only the characteristic changes in jaundice.

The social history failed to disclose in the habits and life of the patient any tendency to hepatic disorder. The family history was one of longevity and good health, save in the death of a sister from mammary cancer at 58, and an aunt of the same affection. The previous medical history was absolutely negative. The patient had always been in good health, not being able to recall a day spent in bed on account of illness. Four days prior to death, without warning, the patient was seized with hemorrhage from the bowels. This continued, and became so excessive as to lead to the development of a high grade anemia with the concomitant phenomena. The hemorrhage could not be checked, and resulted in death, which was preceded by the symptoms of cerebral anemia and empty blood-vessels. Hemorrhages did not take place from any other portion of the body, and there were no subcutaneous ecchymoses.

It is to be regretted that opportunity was not afforded to count the blood and to make any studies on the time clotting. No operative measures were resorted to, because the patient and her family were extremely nervous from the shock of a recent death in the family (the sister, carcinoma of breast, operation, death). For this reason a contemplated exploratory operation was not broached, as the short duration of the jaundice, it was thought, had not led to serious blood-destruction up to this time. When the hemorrhage ensued, it was too late to make a blood count.

The diagnosis during life was that of obstruction of the common bile-duct, probably from carcinoma of that canal. Gall-stones were not considered, as neither the family history, the previous medical history, or the present condition warranted the diagnosis of these foreign bodies. Other foreign bodies were excluded for the want of evidence. The diagnosis of cancer of the bile-duct was based upon the enlargement of the liver, the enlarged and distened gall-bladder, which was free from nodules or of evidence of thickening of its walls. That the gall-bladder was not involved in the process seemed more than likely because of this physical condition. That the liver was not the seat of disease or secondary growth seemed likely, because of the absence of nodules and the absence of enlarged spleen and ascites.

The duration of the case, the gradual increase of the jaundice, its association with complete occlusion of the duct, the family history, and

the freedom from symptoms of gastric or pancreatic disease added further to the view that malignant disease of the common duct was present. Such was the diagnosis, and after one or more visits to establish confidence, it was fully decided to recommend an exploratory operation. Unfortunately the onset of hemorrhage forbade this step.

The interest of the case is increased further by the occurrence of fatal hemorrhage at this early period in the course of jaundice. We are all familiar with cases of jaundice extending over a period far beyond that of two months without exhibiting more than the mildest symptoms of a hemorrhagic tendency, even though they may often be absent. The occurrence of the accident makes it more imperative for us to watch very closely over patients and keep accurate note of the destruction of corpuscles as well as the length of time for blood-clotting.

Summary.—Cancer of the common bile-duct limited to the ampulla de Vater; female; age, 54 years; symptoms during life of jaundice; enlarged liver; enlarged, freely movable, and greatly distended gall-bladder; absence of tumor and no external cause of biliary obstruction; early onset of intestinal hemorrhage with the rapid supervention of death.

Pathological Summary.—Carcinoma and secondary dilatation of the bile-ducts throughout the liver; gradual distention of the terminal ducts, small accumulations of bile simulating abscesses underneath the capsule; other organs and structures free from malignant disease.

Autopsy.—Mrs. R. Operation performed, October 28, by Dr. Steele, to whom I am indebted for the pathological report. A well-preserved woman, aged 54. Extremely jaundiced, prominent epigastrium and right hypochondriac regions. The relation of the abdominal cavity in general is normal. The liver reaches from the fifth rib to the costal margin, the right lobe of which projects two centimetres below the margin in the anterior axillary line. The gall-bladder is much dilated, and is placed so that it could be readily palpated. The hepatic flexure of the colon is adherent to the gall-bladder by a firm and old fibrous band. The gall-bladder is dilated, and measures six centimetres in diameter in its widest portion. It is pear-shaped, and the cystic duct is dilated to the size of a man's forefinger, maintaining the same calibre from its exit at the gall-bladder to its entrance into the cystic duct. The common duct is somewhat dilated, but not to the same extent as is the cystic duct. The hepatic duct is also somewhat dilated, and this dilatation extends into the smaller bile-ducts throughout the liver. These ducts appear on the surface of the liver as small, dark lines, often reaching the size of a small quill or large knitting-needle. There is no sign of gall-stones nor inspissation

of the bile anywhere in the course of these ducts. The mucous membrane of the dilated ducts is somewhat flattened and unduly smooth.

The papilla projects into the duodenum for one centimetre. It presents a curious appearance, being somewhat hard and red at its extreme tip. The opening of the duct is gaping, and admits the ends of a large probe. There is, however, no evidence of ulceration or any point from which a hemorrhage could arise. The liver itself is much bile-stained, and appears fatty with prominent acini.

The mucous membrane of the intestine from the duodenum to the sigmoid flexure is extremely congested and injected, retaining its injection remarkably, considering the length of time that has elapsed between the death and the autopsy. Nowhere can any ulceration be discovered. There is no new growth anywhere in the intestine. The bowel is filled with a dark grumous material, evidently blood, and in the large intestine there are numerous clots. The pancreas is normal. The stomach is normal. There are no secondary deposits in the liver.

On section, the end of the papilla, for a distance of one centimetre from the exit of the duct, seems to be infiltrated and converted into a hard, white tumor that apparently obliterates the duct. Microscopically the tumor was discovered to be a mass of proliferated glands springing from the mucous crypts of the mucous membrane covering the papilla. Between these adenomatous glands numerous nests of columnar epithelial cells are seen lying in a connective-tissue stroma. The diagnosis is undoubtedly columnar epithelioma of the papilla. The gall-duct appears to be entirely occluded. The mucous membrane covering the papilla is densely infiltrated by round cells, and the epithelial cells are vacuolated and show considerable fragmentation of the nuclei.

The mucous membrane of the section of the common bile-duct is much atrophied, being considerably thinner than normal, and is densely infiltrated by round cells. The epithelium is in an advanced stage of degeneration, and in some areas the epithelial lining of the duct has entirely disappeared. No trace of the lumen of the duct can be discovered in the tumor mass, and it is apparently completely blocked.

The liver shows some dilatation of the smaller bile-ducts. In many areas there is apparently some proliferation of the small interlobular ducts, with an excess of connective tissue about them, which is infiltrated with round cells. This process is probably an early stage of biliary cirrhosis. The bile capillaries are distended by bile, which can be seen running in between the columns of liver-cells towards the centre of the acinus. The liver-cells show a considerable amount of fatty infiltration, but do not appear to be in a condition of degeneration.

EXTENSIVE DEFECT IN THE SEPTUM ATRIORUM CORDIS, AND MALPOSITION OF THE KIDNEYS, WITHOUT SYMPTOMS OR SIGNS OF HEART-DISEASE.[1]

By Frederick P. Henry, M.D.,

PHILADELPHIA,

Professor of the Principles and Practice of Medicine at the Woman's Medical College of Pennsylvania.

The persistence of the foramen ovale was supposed by Parsons (*Philosophical Transactions*, 1766, p. 193) to be a provision of nature for the maintenance of the circulation in certain amphibious animals, especially those of the class phocæ, while submerged. A similar opinion was held by Buffon. It was even held by some (*vide* "Ueber das Offenbleiben des Foramen Ovale Cordis bei Erwachsenen," von Dr. Heinrich Wallmann, *Vierteljahrschrift für die praktische Heilkunde*, 1859, p. 20) that in individuals possessing this abnormality death from drowning or hanging would be difficult or impossible. These views were definitely refuted by the demonstration of an open foramen ovale in individuals who had been hanged or drowned. With reference to the condition in certain amphibia, it certainly seems reasonable to suppose that the patulous foramen, so commonly present, is either a provision for their dual mode of existence or a result of it. It is true that there are exceptions to Parsons's statement that "all these" (the phocæ) "have the oval hole between the right and left auricles of the heart, and, in many, the canalis arteriosus also" (Wallmann found the foramen completely closed in a full-grown phoca vitulina); nevertheless, the rule holds good, and departures from it might perhaps be accounted for by peculiarities of individual environment.

In man, a patulous foramen ovale certainly serves no useful purpose, although, as in the case which I report, it is neither incompatible with good health or long life.

A patulous foramen ovale is one of the commonest abnormalities. Wallmann (*loc. cit.*) found it 130 times in 300 consecutive autopsies, and Klob, 224 times in 500. If the figures of Wallmann and Klob are added, it will be found that of 800 cases the foramen was open in 354,—*i.e.*, in about 45 per cent. In statistics like these, every communication between the auricles, no matter how narrow and tortuous, is included.

[1] Read at the meeting of the Philadelphia Pathological Society, May 25, 1899.

It is, therefore, almost superfluous to add that, while minute channels between the auricles are common, deficiencies in the septum atriorum, such as that I report, are decidedly rare.

From a clinical stand-point this case is of unusual interest, on account of the absence of signs of cyanosis. This symptom has been present in high degree when the communication between the auricles has been much smaller, as in a case reported by Dr. B. W. Foster, of Birmingham (*Dublin Quarterly Journal of Medical Science*, August, 1863). In Foster's case the orifice in the auricular septum admitted only a "large-sized goose-quill," nevertheless, the child, a girl about two years old, presented a high degree of cyanosis. In this case the patent foramen was the sole abnormality, there being neither disease of mitral, tricuspid, or semilunar valves, nor narrowing of the orifices of the aorta or pulmonary artery. The ductus arteriosus was closed. In this case also there was a faint murmur "with the latter part of the first sound on a level with the lower edge of the third rib, at its junction with the sternum."

In a case of very extensive deficiency of both auricular and ventricular septa, reported by F. A. Packard (*Medical News*, August 29, 1896), the patient was able to perform the arduous duties of a sailor until the onset of a presumably independent cerebral lesion, eighteen days before death. In this case there was, as I am informed by Dr. Packard, a faint systolic murmur over the body of the heart, but neither cyanosis nor clubbing of the fingers was present.

The patient who furnished the specimen I am about to exhibit was a confirmed opium-eater, about 58 years of age, who was admitted to the Philadelphia Hospital during the present month,—May, 1899. She was of a very sallow complexion, but certainly not cyanosed; her fingers were not clubbed, and nothing abnormal with the heart was detected on physical examination. Her death was due to lobar pneumonia, which was very insidious in its origin and unattended with acute symptoms during its course. For the following notes of the post-mortem record of the case I am indebted to Dr. F. A. Sherrer:

Case.—Mary McC., age 58 years.

External Appearance.—Body of an emaciated, undersized female. Rigor mortis moderate. Abdomen prominent; hypogastric region marked by striæ albicantes. Pubic arch unusually prominent. Just above symphysis is a pigmented scar. The shins are deeply pigmented, evidently from old leg ulcers.

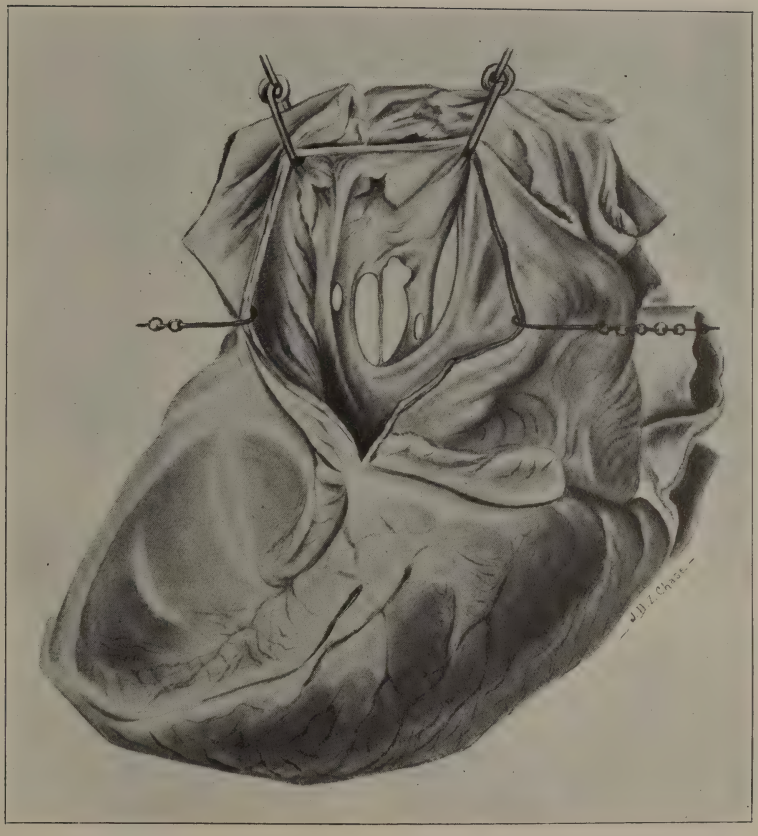
Abdominal Cavity.—On opening the abdominal cavity two silver wire sutures are found beneath the skin in the linea alba. Intestines are moist and glistening. Transverse colon is prolapsed and reaches to the pubic symphysis. There is a marked anomaly in the region of

the kidneys. Both kidneys are displaced downward and forward, towards the median line, so that they approach within three and a half centimetres of each other, at a point two inches below the umbilicus. Left kidney approaches a little nearer the median line than the right. It lies vertically in a line with the pylorus and ensiform cartilage, and is covered with fat and omentum, in left lower edge of greater curvature of stomach in pyloric region. The right kidney is visible as soon as parietes are dissected, lying just below the right lobe of liver, just below the gall-bladder. It projects about an inch beyond the level of the liver. It is twisted on its axis, so that the long diameter is directed from before backward and its hilum looks upward towards the left lobe of liver and left hypochondrium. Left kidney is also twisted on its axis, which is directed slightly obliquely from before backward towards the left. Hilum looks upward and forward. Liver projects five and a half centimetres beyond costal margin, in the right mammary line. Running across right and left lobe on level with costal border is a deep groove. The pylorus lies to the left of median line one and a half centimetres above left kidney. Bladder slightly distended. Uterus is long, fundus drawn out into a peak, apex of which is attached to posterior wall of bladder. Diaphragm extends to fourth rib on right side and sixth on left.

Thoracic Cavity.—Right pleura is expanded and covers pericardium to the usual extent, and is adherent by filamentous adhesions. Left pleural cavity contains a small amount of turbid-yellow fluid (two ounces). Left lung is compressed and pushed upward by the heart, which in axillary line comes to lie almost against thoracic wall. Apex lies in sixth interspace behind the anterior axillary line. Left lung is so compressed that on removal of breastplate it is not visible.

Pericardium.—Pericardium contains normal amount of fluid.

Heart.—Right auricle is very much distended, measuring in verticular diameter thirteen and a half centimetres; transversely, eight centimetres, and contains considerable liquid blood and currant-jelly and chicken-fat clots. The largest mass of clot weighs 100 grammes. The tricuspid orifice admits four fingers. Left auricle contains currant-jelly clots. Mitral orifice admits two fingers. Aortic valve is not competent on hydrostatic test. The pulmonic valves are large but normal in appearance. Pulmonary artery is normal in appearance, but distended, measuring ten centimetres in circumference. Tricuspid valves are thickened at the edges, measuring at the extreme edge two millimetres in thickness. Columnæ carneæ unusually prominent. Aortic leaflets are small and present nothing abnormal. The aorta is small in calibre and measures six and a half centimetres in circumference.



Defects in auricular septum, as seen from right auricle, which is laid open.

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The intima shows very much sclerosis. Mitral valve is very much thickened but pliable and flexible.

Foramen ovale is patulous, but is bridged by processes of delicate diaphragm, which close the upper aspect of the opening. The vertical diameter of the foramen is five and a half centimetres and transverse five centimetres. The upper part of foramen is closed by a crescentic piece of membrane measuring twenty-three millimetres in depth. The lower part of foramen is bridged by three transverse bands. These are inserted about a centimetre below the ring into the endocardium of the left auricle. Body of left ventricle is small; thickness of wall is three centimetres. Thickness of right ventricle is nine millimetres. Muscle is dark and firm.

Left Lung.—Lower lobe is collapsed and airless, except at its lower edge; upper part of upper lobe is completely consolidated just at the apex. Consolidation extends about half-way down. It is covered by a delicate, transparent layer of shining lymph. On section, the lung is granular, hepatized, reddish-gray in color, edematous, and friable. Bronchial glands are enlarged.

Right lung is emphysematous and edematous.

Spleen is enlarged, sixteen centimetres long, nine wide, and three in height. On section, is firm, smooth, consistence increased, and surface has a shining waxy color. No amyloid reaction with iodine test.

Left suprarenal lies considerably above kidney, two and a half centimetres, and can be separated therefrom with ease for a distance of three fingers. Is rather firm. On section shows fatty degeneration of cortex.

Left Kidney.—Pelvis of kidney is pressed upon by kidney itself, and ureter descends between kidney and spinal column. Renal vessels run transversely across the kidney. Left kidney is somewhat bent. Capsule strips with difficulty. Congenital lobulation is well marked. There is an old scar pigmented, probably from infarction, extending half-way from cortex. On section cortex is slightly reduced in thickness, pinkish in color. There are some cysts on surface and a large cyst in interior.

Right Suprarenal.—Right suprarenal like the left suprarenal.

Right Kidney.—Like left kidney.

Liver.—Liver is enlarged and twisted, and resembles a question-mark (?), twenty-eight centimetres by twenty centimetres, by seven and three-fourths centimetres. On upper aspect is the groove already mentioned. Gall-bladder projects two inches beyond margin and contains bile. Edge of liver is rounded. On section the lobules are sharply outlined by connective tissue. Surface is grayish in color.

Uterus.—The uterus is the shape of an Indian arrow-head.

THE MEDICAL TREATMENT OF MOVABLE KIDNEY.

By Alfred Stengel, M.D.,

PHILADELPHIA.

My object in discussing this question is not to enter very largely upon the treatment of this condition, but simply to point out one or two methods of management that have been satisfactory in my personal experience. In the first place, I must refer to the etiology of the condition, though I shall not discuss it at length. The following statements will be accepted as established: Some cases of movable kidney are due to the lateral pressure of tight clothing, which exerts its influence on the kidney by displacing the liver and thus crowding the kidney downward; other cases are due to straining in chronic constipation, coughing, etc., or to pregnancy and other causes of abdominal distention; finally, there are instances in which emaciation, and in particular the absorption of the perirenal fat, is the cause of the condition. In these instances the peritoneal reflection covering the kidney was probably more ample than normal from the beginning. Movable kidney may be an isolated pathological condition or it may be associated with displacement of the liver, the stomach, the spleen, and the intestines; in other words, it may be a part of the general condition known as enteroptosis or Glénard's disease. In the present discussion, I am thinking only of the isolated condition.

If the most desirable treatment could be used in every case of movable kidney, some surgical procedure would probably be employed. The operation of nephrorrhaphy has been so satisfactory, on the whole, that it should be employed in all cases in which the movability of the organ is considerable, and is the cause of active symptoms, unless some contraindication to the operation exists. Unfortunately, it is not always possible to institute surgical treatment. Our patients prefer to temporize, or there may be actual organic diseases which contraindicate operation. In these instances some kind of non-surgical treatment must be employed, and these I group under the head of the medical treatment, as it is the medical man, in most instances, who will be called upon to manage this form of treatment.

Before entering upon the discussion of the methods, however, let us consider the dangers or inconveniences that may be occasioned by this disease. It is merely inconvenient in some cases, and in others it is a dangerous condition. The inconvenience consists in the dragging pain or the uncomfortable feeling in the right side which is so fre-

quently an early symptom or the only complaint. Frequently there is a feeling of numbness, sometimes amounting to pronounced paresthesia in the right hypochondriac and iliac regions, and even extending to the right thigh. This symptom has not been sufficiently emphasized. A more severe symptom is the peculiar form of colic to which these patients are liable. The attacks come on with great suddenness, often immediately after a meal, especially, in my experience, in the midday. They are more or less painful, sometimes extremely so; are usually very short in duration, lasting but a few minutes or half an hour; and often they terminate with one or two movements of the bowels. The attacks may be repeated daily, or they may occur at longer intervals. Naturally they lead to considerable disturbance of the general health, and the condition is therefore frequently mistaken for some form of gastro-intestinal disease. The exact cause of these attacks is not settled, but it is not improbable that compression of the pyloric end of the stomach or of the duodenum, where it is attached to the spine by a peritoneal reflection, is one of the factors. As dangerous results of movability of the kidney, I need only refer to strangulation from torsion of its pedicle.

In discussing the treatment, I do not refer at all to measures intended for the relief of one or the other symptom,—one palliative will be about as efficient as another. Our treatment must be directed solely to the restoration of the kidney to its normal position. Its restoration may be more or less permanent if we can restore normal anatomical conditions, or it may be entirely temporary, lasting only as long as the support which we give the organ remains. There are two plans, then, of treatment, the first one intended to supply the perirenal fat which has become deficient, and the second, the support of the kidney by a proper abdominal bandage and pad.

It is unnecessary to say that the first of these methods, that of forced feeding or stuffing, is inapplicable in cases in which the loss of adipose tissue has played no considerable part in the production of the disease; but there is a distinct possibility of restoring the kidney in some instances in which emaciation has played a part in the etiology. I have seen this several times in cases in which the movability of the organ was not great and the symptoms were never urgent; but I cite one instance of a very striking kind in which the result of the treatment was most satisfactory.

W. P., aged 29, a typewriter by occupation, was admitted to the hospital December 10, 1893. Her father had been killed in an accident. Her mother was alive and was suffering with aneurism of the arch of the aorta.

The patient had had the acute infectious diseases of childhood,

including three attacks of diphtheria. In the summer of 1891 she had typhoid fever, but in general her health had been good.

The illness which brought her to the hospital began in June, 1892, with pain in the left side of the abdomen, flatulence, and burning, but no vomiting. In July, 1892, she was thrown from a carriage and severely bruised. After this the symptoms grew worse, until March, 1893, when vomiting began. The vomita were dark in color, sour, and at first were repeated but once or twice a day, but subsequently three or four times daily. Wasting increased progressively, and constipation became a marked symptom. Menstruation ceased in August, 1893.

Physical examination, at the time of her admission, disclosed a marked distention of the stomach (a veritable phantom tumor). This sometimes appeared and disappeared very quickly, and especially under the influence of nervous excitement, as on the occasion of her exhibition in clinic. Peristaltic waves were plainly visible over the stomach, and gurgling sounds were elicited by shaking the patient. A resistent, kidney-shaped mass was easily palpated in the right hypochondriac region. This was painful on pressure, and easily moved up and down.

Upon admission, the patient weighed eighty-four and one-half pounds, and her height was five feet three inches. She was kept in bed continuously, and lavage of the stomach, oil inunctions, forced feeding, and tonic treatment were instituted. After four and one-half months she had gained thirty-six pounds, the kidney could no longer be felt, and was certainly not movable. The gastric distention or dilatation was less marked.

A year later the patient returned to the hospital for examination, and it was found that she had gained ten additional pounds since her discharge from the hospital, and was in splendid physical condition. The kidney seemed to be in the normal position, and digestion was perfect.

No recurrence of the movable kidney took place for three years, but at the end of that time she again lost weight, as a result of overwork and depression caused by her mother's death, and the original condition came on again. Emaciation was not as pronounced as before, but the kidney was easily felt and subjective symptoms were marked. At this time surgical treatment was instituted, and I am informed that she made a complete recovery, but I did not see her in the relapse or since the operation.

This dietetic treatment is always slow, and, it must be confessed, usually unsatisfactory in its results. The latter is due to the fact that the gastric disturbances frequently will not permit of forced feeding, though rest in bed will relieve the gastric irritability in many cases quite remarkably. In any case, however, successful treatment by these

methods involves rest in bed, or inactivity, almost amounting to rest in bed, for a period of months; and few patients will elect this course. I believe, however, in instances in which distinct emaciation has played an evident part in the etiology, this treatment should be insisted upon, at least for a time, to test its probable effect. In some cases I have urged it even in preference to surgical operation when it seemed that the emaciation was wholly the cause of the movability, and not, as is so frequently the case, largely the result of the disturbed relations of the kidney.

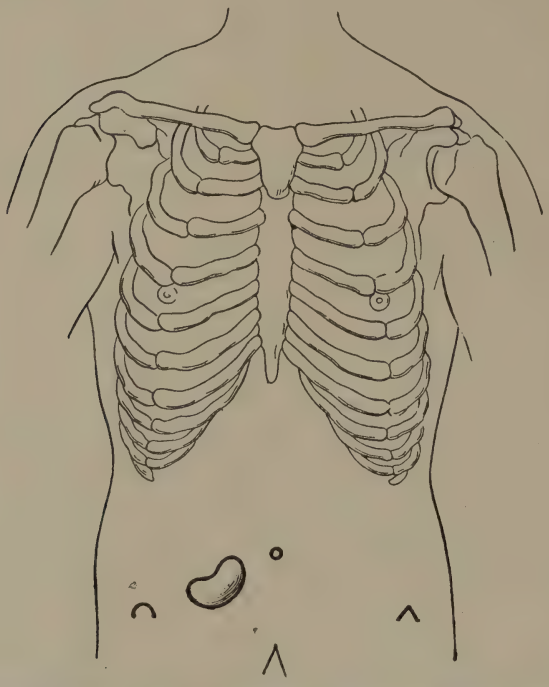
The use of an artificial support of the kidney is necessary in instances in which restoration of the organ by overfeeding is evidently not to be accomplished. Sometimes a combination of overfeeding and artifical support may be made so as to secure temporary relief and permanent support of the organ without subjecting the patient to a disagreeable rest cure. Whether the perirenal fat may be restored under such circumstances is, however, a matter which I cannot answer from experience. I have seen no instance myself in which restoration has taken place.

Medical writers are inclined to condemn the abdominal belt and pad as useless, but I have become convinced from my own experience that this is partly due to the fact that manufacturers have been misdirected in the making of the belt. In post-mortem work I have frequently demonstrated to students the movability of the normal right kidney under its peritoneal reflection. This movability is always in one direction,—namely, from the right above to the left below, and not directly upward and downward in a line parallel to the spinal column. The reason for this direction of the movement is found in the shape of the kidney, and in the direction of its peritoneal attachment. When the kidney becomes abnormally movable, it is in the same direction, and the tendency is to exert pressure upon the duodenum and the pylorus, which are bound to the spinal column by a reflection of the peritoneum similar to that covering the kidney. It may possibly be this pressure that causes the sudden painful crises, as I have already stated. When the peritoneal attachment of the kidney is much elongated and the organ is practically a floating one, supported only by a long mesentery, movability in any direction may occur, but, in the minor grades, the direction of movement is always as I have indicated.

A pad, then, to be effective in restoring the kidney to its normal position should be so shaped and applied as to make pressure upward, backward, and towards the right, so as to push the kidney towards its normal position, since it tends to move downward, to the left, and somewhat forward. The form of pads frequently used presses upward and backward, and, as a resultant of the two forces,—the kidney tend-

ing to fall forward and to the left and the band pushing directly upward and backward,—the organ is pushed farther towards the duodenum than normally, and the symptoms are increased rather than relieved.

I have had several belts and pads prepared, according to the suggestion I have made above, the bands being roughly kidney-shaped, having a concave upper border where the pad is about one-half inch thick, and a convex lower border where it is as much as one and one-half inches thick in some instances. It should be soft, but firm, and



Showing position of pad. The shading indicates the thicker convex and thinner concave border of the pad.

leather-covered. The greatest length of the pad is about three inches; the greatest width about two and one-half inches. This pad is placed in such a position that the concave upper border faces upward and towards the right, lying a little below the line passing from the umbilicus to the anterior superior spine of the ileum, and facing upward towards the tip of the eighth rib. The position is best indicated by the accompanying diagram (Fig. 1). The pad was applied and held in place by an abdominal belt of knitted silk or cloth secured in position with perineal

straps, and makes a gradual and uniform pressure in the right direction. I have used such belts in four cases, all of which have had striking relief, but I refer to two instances in which the improvement was very marked, so that they are worthy of recording.

Mrs. C. B. B., of Atlantic City, first consulted me in July, 1898. I obtained the following history: The patient is 34 years of age, is married, and has one living child 6½ years old. She first began to suffer three years ago, when she had a spot of tenderness in the middle of the abdomen about "the size of a half dollar." There was no disturbance of the stomach, though it was thought at the time that this tender and painful spot had been caused by the eating of some fresh oysters after she had been sitting on the beach. With this tenderness there were griping pains, but no diarrhea. She recovered in a few hours completely, but subsequently the same feeling recurred several times. In 1896 she had an attack of what was called peritonitis, which began in the same way, and on this occasion she went to bed. The abdomen was extremely tender and painful, and much swollen. She remained in bed three days, and in her room for over a week, and did not regain her strength for a number of days afterwards. During this time she was exceedingly constipated, and used medicines as well as injections. During the summer she was in the mountains, and recovered a considerable degree of health, but in the fall there was a mild recurrence of the abdominal trouble; but she again improved, and remained fairly well until Christmas of 1897. From that time until she consulted me there were four or five attacks of greater or less severity, in which her bowels were very constipated and in which she had extreme pain in the upper part of the abdomen. These attacks came on very suddenly, but without vomiting. She feels that there is a good deal of indigestion during the attacks. She passes urine in abundance as a rule. It is light in color, and she usually gets up every night to pass the urine, and formerly she was disturbed oftener. The menses are scanty and irregular, but they have always been so.

On physical examination, I find the patient's heart and lungs normal. The abdomen was swollen by tympany, rather lax, so that palpation could be well carried out. The right kidney was easily felt, and found to be extremely movable. I noticed at the time that the right kidney "can be carried down almost to the pelvis." Besides this condition, nothing of a definite sort was discovered, though there seemed to be a degree of resistance in the pelvic region. The stomach also appeared to be dislocated downward, but the spleen was not displaced. A transverse band of induration in the upper part of the abdomen suggested the pancreas. The aorta could be felt pulsating.

The patient was ordered an abdominal support, with a strong pad, and was given a little nux vomica and soda as an aid to her digestion.

During September—that is, two months after I saw her—she had one attack of considerable severity, but after that began to improve. Her husband wrote me "her appetite is good, and most any kind of food seems to agree with her; she had gained considerably in flesh since last July, and is able to walk considerably."

In February of the present year I wrote to inquire as to her condition and received a very encouraging reply. The patient at the same time saying that she would come to see me herself. On May 10 she visited me, and I found she had suffered no further attacks since the one of the previous year. She is entirely comfortable. The kidney is only slightly movable, and she had gained twenty pounds, her weight now being 132½ pounds.

Mr. S., a rather neurasthenic young man, of about 32 years, presented himself complaining of a peculiar numbness in the right side. This was located in the region of the liver, and extended downward towards the iliac region. He had been a subject of chronic constipation, and had taken a considerable amount of laxative medicine. Besides this numbness, he complained of attacks of sudden colicky pain in the abdomen, centring about the epigastric region. These were of almost daily occurrence, and usually came on immediately after his lunch, and were always followed by one or two movements of the bowel. The condition had lasted for some months, and had been entirely unrelieved by various remedies that he had taken. Careful physical examination of the abdomen revealed a movable right kidney, which could be easily pushed into place, but fell forward and towards the spine when the pressure was relieved. A kidney-shaped pad of the form described above was ordered, and the attacks ceased at once; and up to the present time, a period of eighteen months or more, there has not been a recurrence. Occasionally the bandage is uncomfortable on account of pressure, but with a little manipulation these inconveniences are obviated.

CONGENITAL DISLOCATION OF THE KNEE.

By Dr. James K. Young,

PHILADELPHIA,

Professor of Orthopedic Surgery, Philadelphia Polyclinic Hospital.

By a strange coincidence, common to surgical practice, two cases of congenital dislocation of the knee recently came under the observation of the writer, and are of sufficient rarity to warrant recording them. Both occurred in children of negro subjects.

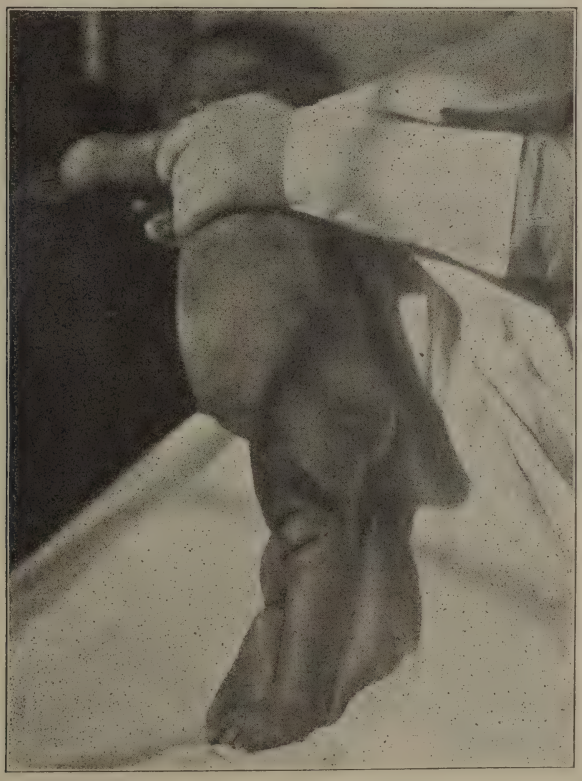


Fig. 1.—Single dislocation of the left knee backward.

Case I.—S. B., a child five months old, treated at the University Hospital in June, 1899; single dislocation of the left knee backward. The father of the child was a hod-carrier. It was a first child, born head presentation, attended by midwife, who said the leg was not

straight when the child was born. Mother working during pregnancy; no injury. Treatment: Rest in best forced position.

Case II.—A. D., child three weeks old, appeared at the University Hospital for treatment a few days after the first case. The child's father was a driver, the mother did housework. The child was in good general health. A good doctor was present at the birth of the child, which was born head presentation, no instruments being used. When examined the child's thighs were flexed on abdomen and limbs extended on thigh. It had also a supernumerary digit. There was some evidence of cerebral injury. The writer believes that frequently the

Fig. 2.—Double dislocation of the knee, congenital.

cause of congenital dislocation of the knee is due to this condition. The child was born with the mother siting on the floor.

Diagnosis.—Double dislocation of both tibiæ.

The dislocation of the tibia forward is the commonest. Of eleven observations made by Hibbon ("Luxation congénital du Tibia en Avant"), eight were normal in other respects, and three connected with other malformations, the former presenting unilateral and the latter dislocation of both sides.

Keating ("Supplement," p. 994) mentions forty-nine cases noted by Phocas, Müller, Joachimstal, Nissen, Myers, Sayre, Gibney, Ketch, Taylor, and others, these cases being dislocations of both sorts, and to these Lovett adds three personal experiences.

Out of thirty-four cases given by Taylor eighteen were dislocations of both sides, sixteen of one side. Twenty-four cases were reported as anterior, of these in one-half of the instances no patella could be felt at birth. The posterior variety of dislocation is very rare.

Lateral mobility is the exception, and, as a rule, is confined to bilateral cases where other deformities exist. In the writer's two cases there was no lateral mobility. Abduction with eversion is the direction in which mobility is most marked. In a case reported by Kronlein there was ankylosis with anterior luxation of both tibiæ. The cause is to be sought in some malposition in intrauterine life or to some injury sustained in birth. Pathologically, the condyle may be small or flattened, the patella rudimentary or entirely absent. A case of Albert's showed the vessels lying behind the outer condyle of the femur, and a bilateral case of Wolff's showed the luxation of one knee only to be permanent.

The treatment of congenital dislocation of the knee can generally be successfully accomplished by manipulation and the use of braces. In the writer's opinion the best mode of treatment is the use of plaster-of-Paris casts, changing them from time to time as the correction of the affected part advances.

In a case of the posterior variety, reported by Hamilton, the hamstrings were divided and reduction made. A similar instance is reported by Sayre in Mason's case.

In the case of forward dislocation operation is seldom desirable. The writer would suggest subcutaneous division of the rectus tendon. Wolff gives an instance of having operated for forward dislocation, and manual osteoclasis of the lower end of the femur has been reported by Phocas. Taylor reported a case which showed good results from braces worn three years.

An Epidemic of Infantile Paralysis.

The occurrence of acute anterior poliomyelitis in epidemic form among little children is rare, but Poughkeepsie, N. Y., seems to be having such a visitation at the present time. Over fifty cases in children, the great majority of whom are under five years of age, have exhibited all the symptoms of sudden spinal paralysis. Dr. Henry D. Chapin, of this city, was requested by Dr. D. M. Sheedy to examine some of the cases under his care. Dr. Chapin regarded the cases as poliomyelitis. An examination of the blood has proved to be negative.—*Medical Record.*

ALUMNI NOTES.

Result of the State Board Examinations.

The result of the examinations by the State Board of Medical Examiners, through which alone graduates in medicine may be permitted to practise in the State of Pennsylvania, has just been announced. The University of Pennsylvania makes the same extraordinary showing in 1899 as was the case in 1898. Of one hundred and forty-three students examined, only one failed, and the general average of the whole number was 86,— an average far in excess of that obtained by students of any other school of medicine.

The graduating class in the School of Medicine at this institution numbered 218, of whom about 135 resided in Pennsylvania. The fact that some men from other States will remain here to practise their profession, or to become resident physicians in the various hospitals, accounts for the greater number who took the examination than who reside here.

The fact that the University of Pennsylvania furnished about thirty-four per cent. of the entire number of candidates for the board's certificate and less than 2 per cent. of the number of failures makes the record all the more remarkable, especially when the exceptionally high average obtained by all the men is taken into account.

The details of the examination are as follows:

Colleges.	No. Examined.	No. Failed.	Per Cent. of Failures.	General Average.
University of Pennsylvania	143	1	00.7	86.00
Woman's, Philadelphia	28	0	00.0	81.22
Medico-Chirurgical	93	15	16.3	79.94
Western Pennsylvania	46	7	15.2	79.01
Jefferson	34	3	58.8	78.24
Miscellaneous	74	22	29.7	76.31
Baltimore Medical	7	4	59.1	72.84
General average	425	52	12.2	80.94

Necrology.

Daniel G. Brinton, M.D., Philadelphia, died while on a visit to Atlantic City, N. J., July 31. Dr. Brinton was born in West Chester,

Pa., 62 years ago, and was a graduate of Yale, and subsequently of Jefferson Medical College. During the Civil War he served as medical director until disabled by sunstroke, afterwards receiving appointment as superintendent of hospitals in Quincy and Springfield, Ill. For a time he was editor of the *Medical and Surgical Reporter*, and of the *Compendium of Medical Science*. In 1886 Dr. Brinton was awarded a medal for his researches in American ethnology, by the Société Americaine de France. He was professor of ethnology and archeology in the Academy of Natural Sciences of Philadelphia and of American archeology and linguistics in the University of Pennsylvania. He gathered together a library of original American literature printed in the original. Very recently he gave to the University of Pennsylvania his entire collection of books and manuscripts relating to the aboriginal languages of North and South America, consisting of nearl 2000 titles and 200 bound volumes. The collection will be named after him.

Hip-Disease.

McKenzie concludes his paper as follows: (1) Hip-disease is a local manifestation of a constitutional disease. (2) Early operative treatment is seldom justifiable. (3) When softening can be determined the surgeon should operate and obey indications, observing all care not to needlessly injure the mechanical integrity of the joint. (4) In the subsequent management of the wound asepticism and antisepticism must be carefully observed. (5) From the earliest moment efficient protection for the joint should be secured and constantly maintained by a well-fitting mechanical appliance. (6) A proper splint should fulfil two indications,—*i.e.*, secure rest for the affected joint and prevent deformity. No effort should be made to employ the splint as a crutch; ordinary crutches should be used. In the adjustment of the splint the knee should be slightly flexed. (7) Constitutional treatment is indicated as in other tubercular affections. Great emphasis should be laid on obtaining the freest exposure to direct sunshine and fresh air. Free use of iodoform is a valuable adjunct. (8) After excision a perfect recovery never follows because the mechanical integrity of the joint is not preserved. (9) Following mechanical and constitutional treatment complete restoration of function is sometimes obtained. (10) Even when breaking down of tissue occurs, which necessitates incision, there is sometimes a perfect restoration and frequently a highly useful return of the joint function.—*Journal of the American Medical Association.*

EDITORIAL.

MORTALITY FROM TYPHOID FEVER IN TWENTY-FOUR AMERICAN CITIES (1889–1898).

Since it became well recognized that typhoid fever was spread largely through drinking-water, physicians have been endeavoring to impress this fact upon the public, and especially upon legislators and municipal authorities, in the hope of so influencing their actions as to obtain a better water-supply wherever that which already existed was deemed unfit for use. Medical journals have for years contained from time to time elaborate articles on this subject. However, the work of educating the public advances but slowly, and that much remains yet to be accomplished is shown by the statistics collected by F. S. Crum, in the *Medical Record*, August 12, 1899. Two points, the author states, are clearly brought out by these figures. (1) The typhoid mortality rates are almost uniformly excessively high; and, second, there has been a notable reduction in the rates in most of the cities during the decade under observation. In the twenty-four largest cities in the United States from which figures were obtained the total number of deaths for the ten years was 41,931, made up as follows: New York, 3533; Chicago, 8450; Philadelphia, 5186; Brooklyn, 1803; St. Louis, 1712; Boston, 1604; Baltimore, 1966; San Francisco, 1151; Cincinnati, 1448; Cleveland, 1663; Buffalo, 1036; New Orleans, 844; Pittsburg, 2272; Washington, 1840; Milwaukee, 625; Newark, 783; Minneapolis, 962; Jersey City, 1103; Louisville, 1280; Omaha, 295; Rochester, 400; St. Paul, 489; Providence, 480; Denver, 1006. The cities are arranged according to population.

The highest typhoid mortality compared with population occurred in Pittsburg, while the lowest was in Brooklyn. Following are the number of deaths per 100,000 population in each of the cities mentioned: New York, 21; Chicago, 65; Philadelphia, 46; Brooklyn, 19; St. Louis, 35; Boston, 33; Baltimore, 41; San Francisco, 35; Cincinnati, 46; Cleveland, 56; Buffalo, 35; New Orleans, 34; Pittsburg, 82; Washington, 73; Milwaukee, 27; Newark, 38; Minneapolis, 51; Jersey City, 62; Louisville, 72; Omaha, 20; Rochester, 26; St. Paul, 29; Providence, 34; Denver, 77.

In London the typhoid mortality from 1890 to 1898 was 13 per

100,000 population, and in Berlin, for the same period, the rate was but 7 per 100,000 population. The author has also estimated the mortality rates from 1889 to 1893 inclusive, and from 1894 to 1898 inclusive. This tabulation shows the percentage of reduction in the typhoid mortality rates for last five years to be as follows (omitting fractions): Newark, 70; Chicago, 61; Cleveland, 61; St. Paul, 60; Denver, 58; Rochester, 57; St. Louis, 51; Milwaukee, 43; Pittsburg, 42; Philadelphia, 33; San Francisco, 32; Jersey City, 31; Omaha, 27; New York, 26; Providence, 34; Cincinnati, 22; Buffalo, 19; Louisville, 19; Washington, 19; Minneapolis, 17; Baltimore, 16; Brooklyn, 14; Boston, 4; while New Orleans had the remarkable rise in typhoid mortality for the last five years of 137 per cent. over the previous five years. The average reduction for all of the cities is 38 per cent. The statement is made that the reduced rates are in most instances directly attributable to improvements in the water-supplies, Newark and Chicago are mentioned as typical examples.

In Newark the water of the Pequannock River was substituted for the polluted Passaic in April, 1892; while in Chicago the supply has been gradually improved by extending the water-tunnels and placing the supply-cribs farther from the lake shore.

The author very properly observes that the reduction of 33 per cent. in the typhoid mortality in Philadelphia during the second of the two five-year periods mentioned, may be somewhat misleading, inasmuch as the recent epidemic would seem to indicate that the reduced mortality was due to no permanent improvement in the conditions of the water-supply. During the first twenty-five weeks of the present year there were reported 774 deaths from typhoid fever in Philadelphia. During the entire year of 1898, which was an exceptionally bad one, from the stand-point of typhoid mortality, there were 563 deaths. The number of deaths in Philadelphia for the previous four years of this period were, beginning with 1894: 370, 469, 402, 401. The figures above given show that the cities mentioned stand in the following order in the mortality of typhoid fever, beginning with the highest: Pittsburg, Denver, Washington, Louisville, Chicago, Jersey City, Cleveland, Minneapolis, Cincinnati, Philadelphia, Baltimore, Newark, San Francisco, St. Louis, Buffalo, Providence, New Orleans, Boston, St. Paul, Milwaukee, Rochester, New York, Omaha, and Brooklyn. In closing, the author remarks that if the death-rate in all the cities had not exceeded that of Brooklyn (and there is no reason why it should not be brought down to this figure) the total typhoid mortality would have been 19,156 instead of 41,931, a saving in this brief period of 22,775 lives.

MEDICAL PROGRESS.

MEDICINE.

UNDER THE CHARGE OF

JAMES TYSON, M.D.,

ASSISTED BY

M. HOWARD FUSSELL, M.D., AND A. O. J. KELLY, M.D.

Notes in Two Hundred and Fifteen Cases of Typhoid Fever.

Bosanquet (*British Medical Journal,* July 8, 1899) presents some notes on 215 cases of typhoid fever, treated in the Charing Cross Hospital between 1890 and 1898.

Age.—Between the ages of 1 and 5 years, seven boys and three girls were admitted. The oldest patients were three men of 46, 48, and 49, and two women of 45 and 46 respectively. Seventy-three per cent. of the whole number occurred between the ages of 11 and 30.

Number of Attacks.—In no instance could it be definitely determined that a previous attack of this disease had occurred, though there was a suspicion of such an occurrence in one woman.

Season.—The last four months of the year accounted for nearly 70 per cent. of the cases, the actual maximum being in October.

Onset.—A gradual onset was the rule. In five instances the disease began abruptly with a rigor, in two with vomiting, and in two with abdominal pain.

Abdominal Symptoms.—Diarrhea was the rule, but in one-sixth of the number there was constipation. Vomiting was troublesome in fifteen instances. Pain in the abdomen was marked in fifteen cases. The spleen was palpable in forty-two instances. Hemorrhage from the bowel occurred in twenty-one patients; six of these twenty-one ended fatally (28.5 per cent.). Perforation of bowel occurred twelve times, and was invariably fatal. Peritonitis without perforation was found in one fatal case. In four cases localized swellings occurred in the abdomen. Traces of albumin in urine were not infrequent; marked albuminuria occurred in twenty instances; acute nephritis was noted once.

Thorax.—Acute pneumonia occurred in ten cases, and a probability of its occurrence existed in seven others. Well-marked pleurisy occurred once, but severe pain in the side without signs was noted several times.

Nervous Systems.—Some degree of delirium was present in most cases. In twenty-three it was marked, and in five of these it was active. Headache was almost constant as an initial symptom; it usually disappeared by the tenth day. Retention of urine occurred in eight instances. Joint pains occurred in several cases.

Temperature.—In only ninety-six cases did the temperature exceed 104° F.

Of these twenty-seven had a temperature of 105° or over; 106° being only twice reached (both fatal).

Cardio-Vascular.—The pulse was not generally much increased in frequency; 120 beats being quite exceptional. In two cases there was bradycardia (both young males), with frequency of 40 to 60. Irregularity was twice observed. Thrombosis of veins occurred in seven cases, the femoral vein being the seat in six of these; in one case associated with blocking of the saphena, which once occurred alone. In one fatal case embolism of the pulmonary artery was found *post mortem.* Embolism of the right common iliac artery, with gangrene of the leg, was the cause of death in one instance. Epistaxis was noted in fifteen cases, hemoptysis in seven, and hematemesis in four.

Skin.—A typical rash was noted as present in 68 per cent. of the cases. Irregular rashes were not uncommon. A petechial rash was twice observed, and once, in a child, actual bullæ were noted. Boils or carbuncles were sequelæ in six instances. An axillary abscess occurred in one case, an abscess over the sacrum in one, and a parotid bubo in one. Erysipelas was a complication in one case, and appeared to have been the cause of death. Otitis was frequent (twenty-eight cases), children being most liable. Periostitis was a complication in four cases, the tibia was the seat twice, a rib once, and the sternum once. False membrane was found in throat in two cases.

Three pregnant women are included in the series, all of whom recovered. In one case the child also lived.

Relapses or recrudescence occurred in fifty-nine cases.

Diarrhea.—From the assigned onset to the day fever finally ceased, in 162 non-fatal cases, in twenty-five the disease ended within twenty days, six of these being free from fever within a fortnight; sixty-six more patients were apyrexial within thirty days, thirty-six others within forty. In twenty-four the temperature fell within fifty days; in sixteen it remained febrile to between fifty and seventy days. Five patients were not free from fever till over ten weeks had elapsed. One patient died of perforation on what was believed to be the tenth day, but the usual date of this accident was from the eighteenth to the thirtieth day.

Fatal Cases.—Forty cases ended fatally (18.5 per cent.). Post-mortem records were found of thirty-five cases. Perforation occurred in fourteen (40 per cent.). In three the perforations were multiple. General peritonitis occurred in all, except one, in which a pelvic abscess resulted. Pneumonia was found in eight cases, in four of which it was double. Hemorrhage was the direct cause of death in one case. In most of the fatal cases death was due to cardiac failure. Laryngeal ulcer was only recorded in one case. In twenty-one cases the large intestine was the seat of typhoid lesions.

Treatment.—As a rule, treatment was expectant, and consisted of liquid diet, absolute rest, and attention to symptoms. The routine medicine was dilute hydrochloric acid. Excessive fever was treated by tepid, cold, or iced sponging.

Gastric Ulcer at the Massachusetts General Hospital, 1888 to 1898.

Grenough and Joslin (*American Journal of the Medical Sciences,* August, 1899) have undertaken a study of the cases of gastric ulcer which were treated at the Massachusetts General Hospital between 1888 and 1898. The statistics deal with 187 cases. Vomiting was the symptom most uniformly present, being absent in but four patients, and with the matter left doubtful in four others.

The time of vomiting does not seem to be a factor in diagnosis, nor does the quantity of vomitus. Pain was definitely located in practically all the cases, though not always confined to one special area. In six instances only did the pain occur to the right of the median line. The pain followed the ingestion of food in 102 individuals, and was unrelated to meals in nineteen cases. In eighteen cases the pain was continuous. In fourteen cases there was no pain, and in fifty per cent. of this number the onset of the ulcer was with hemorrhage of a severe type, and three of these seven cases died. Thus it appears that those cases of ulcer in which there is no pain, as a rule, represent a grave type of the disease. The writers regard tenderness as a very indefinite symptom. That tenderness was absent fifty-one times is especially suggestive, because the patients were cases in which the course of the ulcer was a severe one and the period of observation long. The following conclusions are drawn:

(1) Gastric ulcer is more frequent in Boston than in Chicago, Baltimore, Denver, or San Francisco.

(2) It is five times as common in women as in men.

(3) The average age in men is 37 years; in women, 27.

(4) Hemorrhage was present in 81 per cent. of the cases. It caused the death of 17 per cent. of the male patients, but only of 1.27 per cent. of the females. No woman under 30 died of hemorrhage during this period.

(5) The blood was that of a chlorotic type of anemia.

(6) Perforation occurred in 3.2 per cent. of the cases, and none of these patients left the hospital alive.

(7) Of 114 patients 80 per cent. were discharged cured or relieved, but at the end of an average period of five years only 40 per cent. remained well. The mortality at the same time (due to gastric disease) was 20 per cent. Among the males it was 30 per cent., with the females 9 per cent.

(8) The excessive mortality of ulcer among men, its occurrence in life a decade later than in women, and the absence of fatal cases of hemorrhage in females, point to a difference of the ulcer in the two sexes.

(9) The mortality of 8 per cent., and the failure of medical treatment to effect a lasting cure in 60 per cent. of the patients, indicates the need of surgical intervention in other than emergency cases of this disease.

Right Pleural Effusion in Heart-Disease.

Gianni (*Il Policlinico,* May 1, 1899) reports nine cases of right pleural effusion occurring in patients with heart-disease. In all the heart was considerably enlarged. The effusion developed without pain or fever. The fluid had a specific gravity below 1015, and contained but a trace of albumin. The character of the fluid and the absence of fever indicate that the effusion was dropsical and not inflammatory. The author attributes the frequency of right pleural effusions, in cases of enlarged heart, to the dragging down of the azygos vein, as it arches over the root of the right lung; the pressure thus exerted serving to constrict the lumen of the vessel.

Rumination in a Boy of Nine Years.

Peter (*Pediatrics,* July 15, 1899) reports a case of rumination in a boy of 9 years. The author remarks that the vast majority of cases occur among men, physicians and students being the most frequent subjects. It is usually asso-

ciated with a profoundly neurasthenic condition or idiocy, and is therefore classed as a neurosis. It is generally thought that the habit is within control of the will, and the termination of a majority of the cases warrants this conclusion. In the case reported Blaud's pill, bromide salts, fifteen grains daily, and suggestion accomplished much good. The author draws the following conclusions:

(1) Rumination is a neurosis, associated with a profound neurasthenic condition or idiocy.

(2) It is not, as a rule, associated with a diverticulum or dilatation of the lower end of the esophagus, but is primarily a stomach neurosis.

(3) It may at times be hereditary.

(4) It occurs more frequently in males than in females.

(5) It usually is within the control of the will.

(6) The prognosis as to cure is good.

Earliest Symptoms of Phthisis.

Lenzmann (*Therapeutische Monatshefte,* June, 1899) states that cough, which is usually regarded as one of the earliest symptoms of phthisis, may be absent until the disease is far advanced, the bronchial mucous membrane remaining free from irritation for a long period. Bronchial breathing is often present before the cough develops. The toxic effects of the bacillus should be considered, such as quickening of the pulse, impairment of digestion, slight variations of temperature, and loss of weight. The habits and mode of life, hereditary relationship, and possibility of infection should also be studied. Too much reliance has been placed upon the detection of the bacillus, but it should be remembered that the latter does not occur in the sputum until the disintegration of the tuberculous area has begun. Phthisis may begin with pleurisy, either the dry or exudative form. All anemic conditions predispose to phthisis; the diagnostic sign in these cases being the elevation of temperature.

An Unusual Case of Cardio-Pulmonary Rale.

Carslaw (*British Medical Journal,* July 8, 1899) reports the case of a tuberculous subject who presented a remarkable cardio-pulmonary physical sign. The patient was a man, aged 21, who presented the usual symptoms of phthisis. A week or ten days before his first visit he noticed a clicking sound in his throat when he took a long breath, which phenomenon continued, and was easily demonstrated. Examination of the chest revealed dulness at the left apex, râles and tubular breathing, but no signs of cavity. The right lung was healthy. When he took a long breath and held it, there occurred towards the end of the inspiration a clicking sound of musical quality, and synchronous with the beating of the heart. This click could be heard at a considerable distance from the patient. Examination of the heart revealed nothing abnormal.

Cardio-pulmonary râles, the writer remarks, are of considerable rarity, and belong usually to one of two principal groups,—either murmurs exactly like cardiac murmurs in quality and rhythm, but dependent on pulmonary, not on cardiac disease, or, simply rhythmic alterations of the respiratory murmur synchronous with the heart's sounds. The former variety usually occurs in advanced phthisis, with a large, thin-walled cavity near the heart, and its production is somewhat akin to that of the cracked-pot sound. Not unlike this is

the rhythmic alteration of the respiratory murmur, known as "pulse-breath," which is also principally associated with air-filled cavities in the lung of considerable size or with pneumothorax. However, in certain cases of aneurism of the thoracic aorta the pulsation of the sac influences the current of air in the trachea, and causes a rhythmic blowing sound, as described by Drummond. A certain amount of this pulsatile respiration can in certain circumstances be demonstrated in healthy subjects. In the present case there was a cardio-pulmonary sound quite distinct from those described. Though there were no definite signs of cavity, it was thought that some excavation existed. Sir William Gairdner, Dr. Finlayson, and others, who saw the case with the writer, took the view that their existed a cavity, the walls of which were made tense by deep breathing, and that the murmur then resulted from the impinging force exerted by the heart.

SURGERY.

UNDER THE CHARGE OF

J. WILLIAM WHITE, M.D.,

ASSISTED BY

CHARLES H. FRAZIER, M.D., AND GEORGE M. PURVES, M.D.

The Importance of Blood Examinations in Reference to General Anesthetization and Operative Procedure.

Hamilton Fish (*Annals of Surgery,* July, 1899). The author remarks that safety in anesthesia is the one requirement now necessary to make the science and art of surgery wellnigh perfect; that no person is competent to administer a vapor of such potency as has the power to produce in a living subject a virtual death without a careful training and a knowledge of the physiological and pathological actions of these drugs on the general economy.

It has frequently been a source of wonder to surgeons, whose aseptic technique is above criticism, that certain wounds became infected, that certain patients succumbed to a most virulent septicemia, or that others never rallied from a most trivial operative procedure, succumbing to so-called anesthetic shock without apparent cause.

These results happening, according to the writer, from an inadequate knowledge of the preliminary condition of the resisting power of the patient's blood to bacterial invasion.

The author has demonstrated in the laboratory and the operating-room that safe anesthesia is dependent, first, on the percentage of hemoglobin in the blood before, during, and after anesthetization; secondly, a normal or increased number of polynuclear neutrophiles.

Anesthetic vapors may be inhaled with impunity so long as the hemoglobin percentage remains higher than the physiological requirements of the system, and the phagocytic or reactionary powers of the polynuclear neutrophiles are not overcome by the anesthetic compound.

An absolute decrease in the number of the polynuclear neutrophiles should

always be considered a contraindication to operative procedures, even though the hemoglobin percentage is high, because anesthetic reaction and post-operative wound-regeneration are greatly diminished.

When the hemoglobin percentage has fallen during prolonged anesthesia, it may be regenerated to some extent by removing the anesthetic and allowing pure air to be breathed; however, the operating-room should be supplied with a tank of compressed air or similar compound and placed within easy reach. The air of small operating-rooms quickly becoming contaminated is sufficient reason for this precaution.

To recapitulate, the writer believes that safety in anesthesia and operative procedures is dependent upon, first, a hemoglobin percentage over and above that required for the performance of its normal duties; and, secondly, that a normal or increased number of polynuclear neutrophiles. Under these conditions anesthesia may be produced and operative measures conducted with assurances of perfect safety.

The author believes that, in the light of these investigations and the conclusions drawn therefrom, death from the inhalation of the vapors of ether and chloroform begins primarily in the blood, affecting next the respiration, and finally the heart.

A Method of Maintaining Approximation after Colles's Fracture by Short Lateral Splints without Pressure on the Tendons or Interference with the Circulations.

A. E. Rocky (*Medical Record,* July, 1899) reports a very unique way in which Colles's fracture may be treated so as to avoid the "stiffness" often left in the wrist-joint, when such a fracture is treated in the usual manner.

He proposes to maintain approximation of the fragments by means of lateral splints that would prevent pressure on the flexor and extensor tendons, and not interfere with the circulations, and, further, that would permit motion at the joint during the healing process.

The plan devised was to use pieces of wood, about three inches long, hollowed out to fit approximately the radial and ulnar sides of the wrist. The splints were to be filled with soft plaster and pressed firmly into place at the sides of the wrist, not extending over the joint far enough to prevent free movement.

Position was to be maintained by adhesive strips. The splints were to be thick enough so as to raise the retaining adhesive strips above the skin, thus leaving important structures below free.

This plan was afterwards modified to the use of strips of card-board (narrow), fitted to the sides of the ulna and radius while moistened, and held in position by means of adhesive strips. The author has used this method in twenty-five cases, with great satisfaction to himself and with excellent results to his patients.

Inflammation of the Bursa Gastrocnemio-Semimembranosi.

Forbes Harkes (*Annals of Surgery,* July, 1899). The author reports four cases of enlargement of the bursa gastrocnemio-semimembranosi, which were treated with excellent results by means of excision of the sac.

This bursa in shape is not unlike the letter "u," resting astride of the outer and tendinous border of the inner head of the gastrocnemius, at a point where

the tendon of the semimembranosus muscle overrides this border on its way to its tibial attachment below. This is the only bursa common to these two muscles.

While consisting often of a closed sac, which has no communication with the knee-joint, such occasional communication introduces a factor of importance when the various methods of treatment are considered.

Gruber estimates that one-third of these bursæ communicate normally with the knee-joint, such communicating bursa being usually found in well-developed moles; or, if not communicating directly with the knee-joint capsule, this bursa may communicate with the bursæ above it, which is found almost invariably to lead into the knee-joint directly, or to have such a thin membrane interposed as would offer but slight resistance to the spread of infection in that direction.

The causation of inflammation of this bursa is generally found to have had its starting point in an over-action of the muscles concerned, although the possibility of a tubercular, rheumatic, or syphilitic infection should always be kept in mind.

When the bursa becomes enlarged through fluid accumulation, it follows in its growth the direction of least resistance, which is upward and inward, first appearing at the bottom of the internal popliteal sulcus as an oblong cystic swelling. As the bursal contents increase the tumor is seen to project more and more into the popliteal space, until it occupies a large portion of it; the great portion of the swelling being, however, to the inner side.

The position of hyperextension should always be assumed when swelling is examined, as it is in this position that it is most prominent. The most characteristic sign of the condition is the firm attachment of its base to the cord-like mass of the inner hamstring tendon.

There seems to be but rarely acute pain associated with the condition, but rather only a sense of discomfort and of pressure on the inner side of the knee-joint and the inability to use the limb through the full arc of motion, as in running, etc.

The differential diagnosis would at times be between this condition and that of popliteal aneurism; a lipoma of the popliteal region, as cold abscess and sarcoma.

Treatment is rather limited in its scope, being that of compression and counterirritation, and excision of the sac.

Aspiration of the sac, as advocated by some, is done on account of the risk of infection, and the possibility of the bursa either communicating directly with the knee-joint or else communicating with it by means of another small bursa.

The author has operated on four such cases under aseptic conditions; the wounds all united by primary intention, and there was not the slightest evidence of any inflammation in the knee-joint or in its vicinity.

When last seen, the patients were all free from the trouble caused by the presence and the growth of the bursa.

A Case of Tetanus treated with Antitoxin.

A. de Yoanna (*Medical Record,* July, 1899). The author reports a case of an Italian, who had received a wound of the finger, who was treated in a hospital, and was discharged therefrom in five days as cured. Eight days afterwards he noticed some pain in the neck and spine, and shortly afterwards his jaw was completely "locked."

When the writer saw him there were the characteristic symptoms of tetanus. Antitoxin was immediately injected, twenty cubic centimetres on the external part of the arm, near the wounded finger; twenty cubic centimetres in the right shoulder, and twenty cubic centimetres all along the spine. These three doses of twenty cubic centimetres each were injected during the course of six hours.

Twelve hours after injection the condition of the patient was good. Trismus was less; he could drink water and milk; pulse 90; respiration normal.

The injections were continued at the rate of forty cubic centimetres a day for three days.

The injections were continued for fifteen days, and in all 280 cubic centimetres were used. The patient, a month afterwards, could walk very well, and the only symptom remaining was a little stiffness, especially in the morning, of the muscles of back and legs.

A Report of Twelve Cases of Prostatic Hypertrophy benefited by the Bottini Operation, with a few Comments and Suggestions.

Ramon Guiteras (*Medical Record,* July, 1899). The author reports twelve cases of hypertrophy of the prostate which were benefited by the Bottini operation, which is, the author believes, the best operative procedure which has yet been devised, as it exposes the patient to the least danger and is attended with the best results.

He believes the following conditions to call for operation: Frequency of urination associated with residual urine; an increasing amount of residual urine, a troublesome cystitis due to obstruction; when tenesmus and irritability are so great that catheterization and vesical irrigations do not relieve; when catheterization is followed by bleeding and a bad cystitis.

The writer believes that anterior and posterior cuts are preferable; that the length of the incisions should vary according to the size of the prostate, in moderate-sized ones not exceeding three to four centimetres in length. That the strength of the electric current should be from forty to fifty ampères. Concerning the time, it may be said that the time spent on the incision should be dependent on its length.

The Bottini operation produces good effects in two ways: First, by making a furrow through the gland, lowering the height of the "dam," and thus allowing the bladder to empty itself; and, secondly, by cutting through the blood-vessels and searing them so that the blood-supply to the gland is cut off, and thus atrophy is induced.

It must not be supposed that, on removing the obstruction in these cases, the patient will immediately be relieved of all his symptoms; as the symptoms depend upon the cystitis and atony of the bladder that have been brought on by the obstruction; but if the cause is removed, it is much easier to benefit his condition.

THERAPEUTICS.

UNDER THE CHARGE OF

HORATIO C. WOOD, M.D., LL.D.,

AND

ARTHUR A. STEVENS, M.D.

Some Points connected with Sleep, Sleeplessness, and Hypnotics.

Bradbury (*British Medical Journal*, July 15, 1899), in his Croonian lectures, makes some practical suggestions upon insomnia and hypnotics, which are worthy of careful consideration. He states that the great principle of therapeutics—the removal of the cause—should ever be kept in mind. The causes of insomnia may be classed under four heads,—irritative, toxic, psychical, and those arising from change in the mode of life.

(1) *Irritative Causes.*—This class includes all forms of insomnia caused by pain and milder irritations,—teething, indigestion, worms, eye-strain, inconvenience of faucial adenoids, cold feet, asthma, and vesical irritation.

(2) *Toxic Causes.*—Under this head may be mentioned alcoholism, gout, nicotism, gastric and intestinal disorders, Bright's disease, and excessive use of beverages.

(3) *Psychical Causes.*—Grief, shock, worry, and mental anxiety are among the most frequent causes of insomnia.

(4) *Causes arising from the Change in the Mode of Life.*—Eating late dinners by those unaccustomed to them and change of climate sometimes give rise to insomnia.

After removing the cause, hypnotics are often of great value in breaking the habit of sleeplessness. The best of these for any individual will vary according to his condition. There is no absolutely safe one, but experimental investigation and clinical experience show that paraldehyde stands in the first rank. Chloralamide and chloralose are safer, but slower in action, than chloral hydrate, and of the two the author prefers chloralamide. The sulphones (sulphonal, trional, and tetranal) are also valuable, and in practice he has found sulphonal the most valuable of the three. On the whole, the bromides seem to be the least harmful, and in simple cases, uncomplicated by other disease, it is his practice to try them before resorting to any other drug.

Sleeplessness from overwork, and especially literary work, requires mental rest and change of air and scene. Temporary exposure to the cool air of the bedroom, or the wet pack, or a bath is often useful, and so is a glass of whiskey and water at bedtime, especially in those unaccustomed to the use of alcohol. Twenty grains of sulphonal, or thirty or forty grains of potassium bromide, may be given to break up the habit of sleeplessness. Capsules containing thirty minims of turpentine, given at bedtime, are sometimes beneficial in the insomnia of overwork and worry. The drug acts as a stimulant and derivative, and is stated to act best in plethoric cases. No beverage containing caffeine should be taken after breakfast. In nervous and hysterical women, and especially in women at the menopause, the bromides are very useful. The writer

has long been in the habit of giving a mixture of bromide, tincture of sumbul, and tincture of hops, in camphor-water at the climacteric; and it has helped to remove the insomnia as well as the mental depression and flushing, heats so common at this period. In pneumonia sleep comes usually at the crisis; but where this has not occurred, he has occasionally seen a hypnotic, such as chloralamide or paraldehyde, turn the scale in favor of the patient. In pleurisy five to ten grains of Dover's powder usually conduce sleep, mainly by relieving the pain. A hypodermic injection of morphine may be given with the same object in view. In bronchitis chloral and chloralamide are safe hypnotics, and, as a rule, opiates are to be avoided, as they depress the respiratory centre. The insomnia of heart-disease is benefited by cardiac tonics; but in some cases it is necessary to resort to morphine, either by the mouth or, still better, hypodermically. Paraldehyde and chloralamide are most useful in the writer's experience. Ice to the head is recommended by Morison, where the vital forces are not too low or the temperature subnormal. It often produces sleep rapidly, with a more regular cardiac action. In chronic Bright's disease insomnia is occasionally very troublesome. Eliminants, such as aperients, should be tried, and if they do not succeed chloral hydrate may be given; the drug is safer in kidney-disease than in heart-disease, the reduction of blood-pressure being usually more beneficial than otherwise. Morphine and hyoscine subcutaneously injected have been recommended in obstinate cases; but their employment requires great caution. Erythrol tetranitrate, by reducing arterial tension, often acts as a charm even when sedatives fail. In cases of neuralgia, locomotor ataxia, and so forth, some of the synthetic analgesics—phenacetine—are of value. These drugs act also as hypnotics in cases where there is no pain. Calcium chloride is a valuable remedy in the insomnia due to pruritus. But when pain is the causal factor of insomnia, morphine is the best general remedy, and this should be pushed until relief is afforded.

Alopecia from Acetate of Thallium.

Guinard (*Journal des Praticiens,* November 26, 1898) calls attention to the possibility of thallium acetate causing alopecia. Two cases are reported in which the drug, having been administered for excessive perspiration, caused, in the course of a few days, an extensive loss of hair, not only on the head, but on other parts of the body. The dose in the second case was ascertained to have been one and a half grains daily. When Combemale first called attention to the value of thallium acetate in the night-sweats of phthisis, Huchard reported a case in which the third or fourth dose of one and a half grains had caused a marked loss of hair.

The Prevention of Tuberculosis.

The *Medical and Surgical Review of Reviews,* London, July, 1899, states that the verdict of the Congress on Tuberculosis, which recently met in Berlin, amounts to this: That tuberculosis is not hereditary; that the remedy lies in prevention more than in cure, and that the more healthy the surroundings, the more rare the disease. This is no new discovery, but it is a justification of the claims long ago made, and oft repeated, that unhealthy conditions of life—insanitary and overcrowded houses, unhealthy and exhausting labor, defective

drainage, impure air, deficiency of water-supply, unwholesome and insufficient food, and exposure to damp and cold—are the principal causes of tuberculosis, as of most diseases, physical and moral. These are the conditions of millions of the poor in London and other large cities, and the problem is so vast that, unless aided by legislative measures and State endowment, the attempts of medical men to eradicate the disease must relatively fail.

Therapeutic Use of Vanadium Salts.

Lyonnet, Martz, and Martin (*Lyon Médical,* Nos. 9, 10, 11, 12, 1899), as the result of a series of chemical, toxicological, and clinical researches, draw the following conclusions:

(1) The vanadium salts have an extraordinarily energetic oxidizing power, giving them an important place in the industries.

(2) The sodium metavanadate is a fixed salt, soluble in water, easy to study.

(3) It is very toxic. In intravenous injection the rabbit is killed by 0.017 gramme per kilo; the dog by 0.079 gramme per kilo; the guinea-pig and frog are also killed by subcutaneous injections. Animals die with dyspnea, in convulsions. No action on heart.

(4) In experiments, the sodium metavanadate acts very little on digestive ferments, sugar of the blood, yeast, or microbes.

(5) In spite of its toxicity, it can be given by mouth in doses of one to five milligrammes in twenty-four hours. It is best given intermittently, two or three days each week. It has almost no taste, and is well borne by patients.

(6) Sodium metavanadate almost always gives rapid increase of appetite, strength, and weight. The urine increases. The urea and the coefficient of nitrogenous oxidation increase. Sugar diminishes slightly in diabetes.

(7) Combustion is actively increased. The drug acts like a whip to nutrition. It oxidizes not only once, but after yielding its oxygen once to the tissues, takes up new oxygen and repeats the process, constituting a seesaw between vanadic and hypovanadic acid. The vanadate is a sort of purveyor for the tissues, acting by mere presence, in infinitesimal quantities, like a ferment.

(8) It has the value of a medicine. It is superior to arsenical salts. It is the drug to choose in retarded nutrition and in cachectic states.—*Merck's Archives,* July, 1899.

Night-Terrors, Symptomatic and Idiopathic with Associated Disorders in Children.

Guthrie (*Clinical Journal,* June 7, 1899) concludes a paper on the above subject as follows:

(1) Night-terrors are always to be regarded as evidence of ill-health.

(2) They may be divided into symptomatic and idiopathic night-terrors, according to their origin.

(3) Hallucinations of vision are mostly caused by a febrile disturbance.

(4) In some cases the content of the dream may throw light on its cause.

(5) The character of the dreamer is of more importance than that of the dream.

(6) In simple cases simple treatment based on the cause is sufficient; but in idiopathic cases the environment and nature of the patient have also to be considered.

Sedatives are very useful in all kinds of night-terrors; they should be given at bedtime for a few nights. In symptomatic cases paraldehyde in doses of fifteen to twenty minims (for a child of five years) is very effectual. Ammonium bromide may be given in combination with other drugs, such as iron, bismuth, rhubarb, castor-oil, gentian, and so on, as the case may be. Cardiac stimulants, or bitter or other tonics, may be combined with bromides. Quinine does not agree with highly neurotic children; it should always be combined with hydrobromic acid.

Excessive Treatment of Diabetes.

Dieulafoy (*Lyon Médical*, May 14, 1899) divides diabetics for convenience into those who do not pass more than 150 grains to 230 grains of sugar a day and those who pass 1500 grains or more. He contends that the chief point in treatment is that the patient should not lose flesh. He believes it wrong to cut off all starchy food. In cases, where not more than 750 grains of sugar are passed a day, he finds fifteen grains of antipyrin, morning and evening, and eight grains of sodium bicarbonate sufficient to diminish the glycosuria. In mild cases a little potato and bread may be taken. When the quantity of sugar has been reduced to sixty or seventy-five grains, the condition should be disregarded. Sodium arsenate may be given. In severe forms of the disease the patient should be allowed to drink according to his thirst, and to eat according to his hunger. Sugar should be washed out by liquids, and not allowed to accumulate in the body. Milk may be given as lactose is not converted into glucose. Four grains of antipyrin may be given, and if without effect sodium arsenate.

Cases of Septicemic Infection treated with Antistreptococcus Serum: Rapid Recovery.

J. Mitchell Bruce (*British Medical Journal*, July 8, 1899) reports two cases of severe septicemic infection, one of septic endocarditis, the other of septicemia of the cerebro-spinal type, in which recovery followed the use of antistreptococcus serum. The author concludes that success may be obtained after other measures have failed; that success may be attained with one serum after another has failed; that the remedy may act with great rapidity, all the phenomena disappearing in the course of forty-eight hours.

The Treatment of Cheyne-Stokes Breathing.

Rabe (*Gazette hebdomadaire de Médecine et Chirurge*, January 22, 1899) gives an elaborate description of Cheyne-Stokes breathing, and suggests the following treatment: Morphine, notwithstanding earlier observations to the contrary, has been found of distinct value by Huchard, Gubler, and others. It seems to allay anxiety, relieve the dyspnea, and to induce sleep. It should be administered at night, and in small doses, on account of the frequent association of chronic nephritis. According to Rabé, who cites many instances, a combination of morphine with digitalis is the most efficient remedy when the dyspnea is a symptom of atheroma with weak heart.

OBSTETRICS.

UNDER THE CHARGE OF

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ASSISTED BY

W. A. NEWMAN DORLAND, M.D.

The Decadence of Antistreptococcic Serum.

An editorial in *Obstetrics,* July, 1899, says: It now seems quite settled that Marmorek's serum, the antistreptococcic serum that it was hoped would give direct control of the germs of puerperal sepsis, is a failure. Before the Société Obstétricale de France, Macé reported in April adversely to its use, and stated that its employment was rapidly being abandoned. His views were endorsed by others present. The dissatisfaction of the Institute Pasteur was likewise mentioned, which, in itself, is the most deadly blow the remedy has received. The report of the committee of the American Gynecologic Society, at its recent meeting, was distinctly adverse. A large majority of cases of puerperal sepsis are of mixed infection, and it is scarcely to be expected that a serum whose potentiality was limited (in theory) to the destruction of but one germ, the streptococcus, would prove successful. Denise, of Tourain, allows for at least fifteen varieties of bacteria in the production of puerperal sepsis. He has prepared a serum with which sufficiently good results have been obtained to lead to further experimentation. Because of the failure of Marmorek's serum we need not fear that serumtherapy in this disease is unavailable. A successful serum will yet surely be discovered. The antidote may appear as a chemical, although it has not yet been demonstrated, and we cannot point to any chemical blood-remedy that can be used for an argument of analogy. But this argument of analogy is the basis of our faith in serumtherapy. We must believe that if there are antiserums for one germ there must be for all. From the day that vaccination achieved success the way has been pointed out along which the pioneers in germtherapy must move.

Exsection of the Puerperal Septic Uterus.

Prochownick (*Monatsheft für Geburtshülfe und Gynäkolgie,* June, 1899) in the course of an article upon this operation lays especial stress upon the following passages:

The uterus may be extirpated for puerperal sepsis only when it is the sole seat of the disease, and when no other resources remain, and death is surely impending from the condition of the uterus.

After a case of abortion or labor, it is indispensable to have an exact undisturbed study of each individual, in connection with *one* careful, physical examination. Any interference during the first two days which would tend to interrupt this necessary period of observation is to be earnestly avoided.

During the past few years he has sought, by means of regular systematic blood-culture (in preference to the cultures from the uterine discharge), to

attain a simple and certain method for the early diagnosis of sepsis, and with it an ever-increasing degree of success.

In all cases with positive results he has found streptococci, and in every case in which this germ was found the patient died. With negative results all the patients survived, but two (who had purulent peritonitis), despite the clinical severity of the cases. Marmorek's serum has proved a failure, despite a fair and systematic trial, kept up for twenty-four hours. A negative blood-culture, with severe clinical symptoms, indicates that, while typical pyemia is absent, the prognosis cannot be called favorable, and that local operative interference is useless, and probably eventually hurtful. If blood-cultures remain negative, a radical operation should not be undertaken until after the uterus has been examined thoroughly, washed out, and cauterized with 50 per cent. alcohol.

In *résumé*, the election of the operation of extirpation is not dependent upon cultures made from vagina and uterus, but upon calm, undisturbed clinical study of each case, combined with blood-cultures.

Puerperal Pyelonephritis.

Vinay and Cade (*L'Obstétrique*, May 15, 1899) report nine cases of this complication of pregnancy. The recognition of this accident is comparatively recent, because it has been confounded with cystitis. Compression of the ureters by the gravid uterus has long been known as an occasional determining cause of eclampsia, but it was not until the publication of Kruse's thesis (Würzburg, 1899) that the profession were made aware of a special form of pyelonephritis in the pregnant. Three years later Reblaud reported the first compendious study of this affection, and since that time a number of important papers have appeared on the subject, including several theses.

The affection cannot be said to be of frequent occurrence, but is far from being a rarity. The nine cases of the authors occurred at the Hôtel-Dieu Maternity since 1893. It may occur at any time after the fourth month. The etiology appears to be obscure, and many apparent contributory factors have been claimed without any proof. The immediate cause often appears to be in some way connected with pressure on the ureters by the gravid uterus, and the right ureter is much more subject to this accident than the left, but this anatomical fact entirely fails to explain the origin of the disease, and is no more than an occasional contributory factor. Compression to some degree is far more frequent than is the disease in question. The latter is undoubtedly in some way dependent upon the presence of pathogenic bacteria, and there appears to be little doubt that the bacillus coli is found more frequently in the urine of these patients than any other germ, although the streptococcus has also appeared to be pathogenic in these cases. Reblaud believes that the bacillus coli reaches the urine of the pregnant woman through the intestines, and Bué claims that purgatives cut short the pyelonephritis.

The symptoms are obscure in but a few recorded cases. As a rule, the patient is stricken with grave manifestations, consisting of chills, fever, rapid pulse, malaise; and, in general, the clinical picture of a severe acute disease. Of symptoms especially referable to the disease, there are scanty dark-colored urine, which is albuminous, and within a few days purulent, with the usual picture of the urine of pyelitis associated with nephritis. The amount of urine is about one litre in twenty-four hours.

Examination reveals a normal condition of the bladder, as the tenesmus and incessant desire to urinate are not present, and there is no tenderness on pressure. On the contrary, exploration of the kidney reveals marked tenderness. The other viscera, as a rule, present nothing abnormal.

The disease usually pursues a rapid course, but resolution is not complete until the period of pregnancy has terminated, while relapses are of frequent occurrence. The disease occasionally returns with each succeeding pregnancy.

With regard to prognosis, fatalities are extremely rare, despite the severity of the symptoms. Delivery always exerts a favorable influence upon the disease, and hence those cases which develop late in the pregnancy tend to experience a more clear-cut recovery. There appears to be no evidence that the fetus is in any way compromised by the disease.

It is evident from what has been said that diagnosis is not usually difficult. Certain conditions like right salpingitis and appendicitis may require to be excluded. If the physician is himself a good microscopist, or has access to one, the diagnosis ought to be made without the least trouble.

The two indications for treatment are to ease the pain by rest in bed, and sedatives, and to disinfect the urinary tract. Vesicants should not be used, but morphine is not contraindicated. The milk diet should be insisted upon, as in eclampsia. Intestinal antisepsis is imperatively demanded, and the authors recommend benzo-naphthol for this purpose. Artificial delivery might be theoretically indicated in very severe cases, but, as death, convulsions, etc., have not thus far been recorded as accidents in this disease, one should think twice before deciding on this step.

GYNECOLOGY.

UNDER THE CHARGE OF

CHARLES BINGHAM PENROSE, M.D.,

ASSISTED BY

H. D. BEYEA, M.D., AND H. L. WILLIAMS, M.D.

Six Cases of Uterine Tuberculosis.

Vassmer (*Archiv für Gynäkologie,* Band lvii, Heft 2, 1899) believes that tuberculosis of the uterus is of considerable clinical importance, since it is obseved quite frequently. The six cases he reports were found at Runge's clinic within a space of ten months. From a study of these cases and those to be found in the literature he classifies the pathological anatomy and the clinical characteristics of the disease. All of the forms of tuberculosis which are described as occurring in the cervix (disseminated miliary, endometritis caseosa and ulcerative), except the tubercular new growths were observed in the six cases. In most instances there was an associated tuberculosis of the adnexa; there being isolated endometrial tuberculosis in only one case. Amenorrhea was a characteristic symptom in all cases where the endometrium was found extensively diseased, and metrorrhagia and menorrhagia when the disease was not advanced.

In four cases the diagnosis was made by the microscopical examination of tissue removed by the curette. In the cases of isolated and advanced tuberculosis reported many curettements did not suffice to cure the disease, but when mild, there was always a marked improvement. The possibility of there developing a miliary tuberculosis after conception, abortion, or labor, also the possibility of infection being carried from the placenta (which can no longer be doubted), determines the treatment to be a radical one (hysterectomy) when the patient is in the period of sexual activity. The presence of pregnancy in a tubercular uterus must always be looked upon as a very serious complication.

The Treatment of Leucorrhea with Vaginal Injections of the Yeast Fungus.

Landau (*Deutsche medicinische Wochenschrift*, No. 11, 1899) states that the usual local treatment applied in the cases of leucorrhea give only temporary benefit. With the object of gaining better results in the treatment of these cases he experimented in forty cases of obstinate leucorrhea by injecting into the vagina the yeast fungus. The injections were repeated every two days. The fungus was the saccharomyces cerevisiæ. The result of the treatment was very satisfactory, the discharge immediately disappearing, and returned only rarely. Landau believes that through the growth of these non-pathogenic germs in the vagina the vital conditions necessary for the development of pathogenic bacteria is interfered with and the leucorrhea cured.

A Therapeutic Use of Airol.

Eberson (*Therapeutische Monatshefte*, No. 1, 1899) compares the therapeutic value of airol and iodoform as a dusting powder in two cases. In both cases he had repaired the perineum. The operations were performed on the same day. In one instance airol was applied as a dusting powder, in the other iodoform. Although the wounds were treated in the same manner, the one where the airol was applied healed more rapidly and satisfactorily. He had had similar results in the treatment of other wounds with airol, and warmly recommends this drug. He advises that the powder should not be thickly applied, as crusts are formed which hinder the escape of wound secretions.

The Treatment of Tubercular Peritonitis by Celiotomy.

Delangre (*Annales de la Société belge de Chirurgie*, No. 9, 1899) reports seven cases where he performed celiotomy for tubercular peritonitis. Of the seven cases (four males and three females) one died two months after the operation, and two after two years (phthisis). The four others are living, one case being well after nine years.

From his observations in the treatment of this disease Delangre formulates the following conclusions: (1) Tubercular peritonitis may rarely heal spontaneously. (2) The treatment should be surgical. Celiotomy should be the operation selected. (3) The influence of celiotomy in such cases may be divided into three groups: (*a*) The patient withstands the operation, but dies soon after (caseous or ulcerative peritonitis, the patient greatly weakened, and operated upon in the late stage of the disease); (*b*) improvement for a year (hereditary

tubercular history); (*c*) definite healing (early operation, no hereditary history, purely localized disease, also in hereditary history). (4) Celiotomy is not made difficult where there are tubercular tumors (the fibro-granular form). (5) Celiotomy gives, when performed early, a very favorable prognosis; an unfavorable prognosis in the late stages of the disease. (6) One-sided apical infiltration and slight serous pleurisy do not form a contraindication to operation, since these affections may heal after operation. Acute miliary tuberculosis, advanced pulmonary phthisis, and kidney and intestinal tuberculosis are contraindications to operation. (7) The reappearance of ascites after celiotomy can be treated either by another celiotomy, or paracentesis abdominalis, abdominal massage, or the application of iodine-collodion.

The Influence of Diabetes Mellitus on the Functions of the Female Genital Organs.

Danckworth (*Inaugural Dissertation,* Halle, 1898; *Centralblatt für Gynäkologie,* No. 23, 1899), from a study of diabetes mellitus, determined that this disease occurs only a little less frequently in women than in men; also that in women it occurs later in life. In the material of the Hallenser Frauenklinik pruritus vulvæ was found as the first symptom of the disease in 20 per cent. of the cases, but pruritus vulvæ, unassociated with sugar in the urine, was frequently observed. Vulvitis diabetica is, when pronounced, most characteristic. Pruritus of diabetes is usually the primary resulting symptom of the general disease. A premature menopause from atrophy of the uterus, ovaries, etc., is relatively frequent, and this is possibly caused by disease of the genital nerves. Diabetes can also produce disease of the uterine mucous membrane. Pregnancy may occur in diabetes, but, as a rule, it takes place in the beginning of the disease; also diabetes may develop during pregnancy, and without the patients being particularly predisposed to it. In one-third of the cases collected abortion took place. In a number hydramnion was present. Labor and the puerperium are not influenced by the disease, but lactation is disturbed. The disease is usually made worse by pregnancy, labor, and the puerperium, and rarely diabetic coma and death follow. The induction of abortion is never indicated. Danckworth concludes this very interesting monograph with a table of the cases seen at the Hallenser Frauenklinik.

Acute Diffuse Gonococcus Peritonitis.

Bushing (*Bulletin of the Johns Hopkins Hospital,* Vol. x, 1899) reviews the literature on acute infection of the peritoneum with the gonococcus, and reports two cases operated on where there was an acute diffuse gonococcus peritonitis. He states that, owing to Bumm's original assertion, gonorrheal processes remain limited to the surfaces lined by mucous membrane, it had, until comparatively recently, been generally doubted that the gonococcus of Neisser, without the association of the more common pyogenic organisms, was capable of inducing an acute general peritonitis. It is now, however, recognized that structures other than those of epithelial character are liable to invasion by the gonococcus. He believes that considerable scepticism remains regarding this point, and asserts that these two cases he reports prove that the gonococcus can alone infect the peritoneum. His conclusions are as follows: (1) The gono-

coccus is capable of causing a specific infectious disease,—namely, gonorrhea,—and at the same time other and less specific pathological conditions. (2) There is experimental proof that in certain small animals the gonococcus can set up acute alterations in the peritoneum homologous with the acute septic serositides in man, but differing from these in their tendency to rapid and spontaneous healing. (3) Hitherto there has been wanting conclusive proof that in the peritonitides attendant upon gonorrhea occurring in woman, the gonococcus was solely or chiefly concerned. The inflammations had been variously regarded as mixed infections and chemical inflammations. (4) The cases reported in his paper bring for the first time convincing evidence of the existence of a diffuse, general inflammation of the abdominal cavity, caused by the gonococcus. (5) It has been recognized that extension of the gonorrheal infection from the genital organs to the peritoneum may occur in the puerperal state; a similar sequel is shown to be possible during menstruation. (6) Such ascending forms of gonorrhea, doubtless, under ordinary circumstances, remain localized in the pelvis, and rarely demand surgical investigation in the acute stage. (7) A general involvement of the peritoneum, such as occurred in the two cases given, must either be rare or unrecognized, and may depend upon some especially receptive condition of the serosa or the virulence of the organism. (8) The peritoneum is not more immune than are the pericardium or endocardium to gonococcal infection, and, being more exposed, suffers more commonly in females, although the relatively benign course of the disease makes it a rare condition to come to the attention of the surgeon in the acute stages.

PATHOLOGY.

UNDER THE CHARGE OF

JOHN GUITERAS, M.D.,

ASSISTED BY

DAVID RIESMAN, M.D.

Spinal Cord Lesions in Tetanus.

Matthes (*Zeitschrift für Nervenheilkunde*, Vol. xiii, 1899, and *British Medical Journal*) recalls the fact that last year Goldscheider and Flatau brought forward experimental evidence to prove that definite changes took place in the anterior horns of the cord in tetanus. They showed that swelling of Nissl's corpuscles occurred with enlargement and sometimes disappearance of the nucleolus; these observations were confirmed by two necropsies on the human subject. Westphal also found similar lesions. Matthes gives notes of two cases. In one of them the appearances differed from Goldscheider's cases. Both were treated with Behring's serum. The cord of the first case was examined six hours after death, and that of the second four hours after death. In Case I there were extensive hemorrhages in the lower dorsal region, chiefly implicating the right half of the cord. The gray substance was almost entirely destroyed. The posterior horns were less affected than the anterior. Small hemorrhages were scattered in various parts of the cord. All the small blood-vessels were

enormously enlarged. In Case II there were no hemorrhages. The brain was unaffected in both cases. Several of the anterior polar cells appeared normal, others showed swelling of the cell granules as described by Goldscheider. Some of Nissl's corpuscles showed a process of fine granular disintegration, affecting only the central part. The cells in general showed a diminution in the number of their processes. The condition of the nucleoli varied considerably. Some were perfectly normal, whilst others appeared to have lost their rounded form and were darkly stained; this was specially noticeable in the cells showing the fine granular disintegration. Goldscheider has observed a similar distortion in the form of the nucleolus. The extensive hemorrhages in Case I are believed by the author to be due to hyperemia, and not to the direct effect of the tetanus poison. It appears to be doubtful at present whether any specific changes due to the tetanus poison exist. Berger has described very similar lesions in cases of general paresis. The almost negative result in the second case would, according to Goldscheider, point to the beneficial effect of the serum treatment. Matthes reserves judgment, and only wishes to point out the slight changes which he found in his cases.

Transmission in Typhoid Fever of the Agglutinative Power of the Blood to the Fetus.

Mossé and Fränkel (*Gazette des Hôpitaux,* January 13, 1899, and *Medical and Surgical Review of Reviews,* June, 1899) state that the agglutinative power acquired by the blood during infections can be transmitted from the mother to the fetus. The results obtained by Widal and Sicard in the rabbit with the typhoid bacillus, by Achard and Bensaude in the guinea-pig infected with cholera, and by Lannelongue and Achard in proteus infection, have established this. But negative results in the same species have also been recorded. Similarly in man the reaction has sometimes been transmitted, sometimes not. A young woman had typhoid fever in the sixth month of pregnancy. The child was born at term well formed. The blood of the child had a distinctly agglutinating effect on the typhoid bacillus, but less than the blood or the milk of the mother. The placenta, examined microscopically, was found to be quite normal. These facts, ascertained for the first time in the case of a woman who was delivered at term, and who had had typhoid fever during pregnancy, seem to show that the agglutinating power can pass from the maternal to the fetal blood. However, the child had been suckled. Could not the power have been transmitted by the milk? Such transmission has been demonstrated in the mouse by Widal and Sicard, as it was soon afterwards in the human being by Landouzy and Griffon. But placental transmission was definitely proved by Mossé and Fränkel in the following case: Abortion occurred in the fifth month of pregnancy, on the twelfth day of convalescence from typhoid fever. Blood taken from the fetal heart had a distinctly agglutinating power, but less than that of the maternal or placental blood or than that of the colostrum. The placenta was normal, and the typhoid bacillus could not be found in it.

Agglutinative power of the fetal blood might be explained in two ways,—by fetal infection from the passage of typhoid bacilli through the placenta or by the passage of agglutinating substances. However, the latter seemed to be the correct explanation. For Achard in such cases had shown that the fetus was sterile; he concluded that, "like a filter, the placenta retains part of the agglutinative property of the maternal blood, but allows some to pass into the

fetal blood, which retains it for some time after birth." The inconstancy of transmission appears to depend upon the varying intensity of the power acquired by the maternal blood. Thus in experiments on animals Achard obtained negative results when the mother had received only one or two inoculations, positive when she had received several. The time during which the agglutinating substances act on the placenta appears to be another factor, for in two negative cases in the human species when abortion occurred this period appeared to have been about eight and twelve days respectively; in the two positive cases which have been related it was about forty-five and ninety days respectively.

Friedreich's Hereditary Ataxia.

Rennie (*British Medical Journal,* July 15, 1899) reports a case of Friedreich's ataxia with autopsy, occurring in a boy, aged 12 years. The patient had a younger brother afflicted with the same disease. The necropsy revealed well-marked degeneration of the posterior columns, throughout their whole length; of the posterior root zones, and also of a large number of posterior root fibres; much less marked degeneration in the lateral columns, in the region of the crossed pyramidal tract; some scattered marginal degeneration at different levels; distinct degeneration of the direct cerebellar tract with atrophy of Clarke's column. These findings correspond pretty closely with those previously recorded, and are generally recognized as the typical lesions of Friedreich's ataxia. It is interesting to note how well defined the lesions were, though the duration of the disease was stated to be only about fifteen months; while in all the other necropsies reported the disease had lasted several years. The disease is apparently a primary nerve degeneration grafted upon an imperfectly developed spinal cord, such imperfect development being due to unknown hereditary influences. This view is supported by the fact, to which Newton Pitt has drawn attention, that the degenerations attack by preference the parts which are developed late. These parts have also the least important functions, and, according to Hughlings Jackson's law, these are the first to degenerate. Further, the sclerosed regions correspond to the tracts, the nerve filaments of which receive their myeline sheath after the fifth month of fetal life.

Pathogenesis of Chorea.

Maragliano (*Centralblatt für innerer Medicin,* May 13, 1899; *Medical and Surgical Review of Reviews,* London, June, 1899) believes that it is now proved that acute articular rheumatism is an infective disease, caused by a variety of micro-organisms, especially the streptococcus and the staphylococcus, or both together. Considering the close relationship which exists between rheumatism and chorea, it is probable *a priori* that they have the same etiology, and further research has now confirmed this. The writer in 1891 cultivated a particularly virulent staphylococcus aureus from the nervous system of a child who had died of rheumatic chorea, and soon afterwards Pianese obtained a bacillus, probably the bacillus coli, and a coccus from a case. Since then Meyer, among others, has demonstrated the staphylococcus microscopically in the nervous system, and culturally in every other organ, and Hoctrovi has found the same organism in the blood of a choreic boy during life. Chorea is, therefore, like rheumatism, an infective disease, caused in more than half the cases by the staphylococcus, in the remainder by other organisms such as diplococci and bacilli.

MISCELLANEOUS.

THE DISEASE OF BERIBERI.

In a recent issue of the *New York Sun* it was stated that beriberi, a disease of the wet season of East India, has broken out among the Filipinos of Cavité, and that there are two deaths a day there from it.

As a physician who has treated thousands of cases of this disease during a sojourn in Japan, will you permit me to call attention to the following suggestion, which I published in the University Medical Magazine, May, 1896:

"A Possible Specific for Beriberi.

"Dr. Carreau, of Guadeloupe (in a contribution au traitement de la lépre, Pointe-à-Pitre, Guadeloupe, 1892), mentions the case of a Brazilian leper, bitten by a rattlesnake. The man succumbed after twenty-four hours. It was observed when he was dead that all his lepromas were enfeebled. Dr. Carreau, attributing this effect to the methemoglobinemia produced by the venom, tried to imitate the intoxication in the case of a very sick leper. He gave him enormous doses of chlorate of potassium, a salt which increases rapidly the quantity of hemoglobin of the blood, and may cause death by this same action. The patient swallowed forty-five grammes of this remedy in three doses, the highest being twenty grammes, in sixty hours. He presented the most pronounced symptoms of intoxication; his blood showed the spectroscopic bands of hemoglobin and methemoglobin. During some days he hovered between life and death. He recovered, however, from the shock, and felt a very distinct improvement in all the cutaneous surface attacked; the leonine face smoothed down, the skin, which had lost all elasticity, could again form folds. The treatment continued eight days.

"I suggest that a remedy which has such an effect—that is, to increase rapidly the hemoglobin of the blood—may also be applied to the treatment of beriberi, a disease whose principal characteristic is the diminution of the hemoglobin.

"Albert S. Ashmead, M.D."

Perhaps, too, a few words generally about this etiologically mysterious disease may not be amiss here. "Beriberi" means "goat's gait" or "sheep's run," and has reference to the dropping of the toes, or *pes equinus*, and the labored lifting of the leg and thrusting it forward.

These symptoms are due to hemoglobinemic paralysis of the peripheric nerves, in my opinion, from carbonic poisoning.

In Japan, and the Far East generally, beriberi is caused by the fumes of charcoal, the fuel of the stoves. In the wet season these fumes are held down by the moisture of the air. In the dry season there is no beriberi at all, the dry northwest winds dissipating the gases.

I have examined a number of beriberi ships in the harbor of New York, mostly from Dutch India and the Philippines, and in every instance the cargo was such as would produce an emanation of carbonic gases,—graphite, pure carbon, from Colombo, Ceylon; burned coffee, from Java; fermenting third-grade sugar and crude sugar without fermentation,—that is, undetected fermentation, from Iloilo, and wet grain and hemp cargoes. I have never seen or heard of such an afflicted ship that was not carrying a carbon-producing cargo.

As to the theory propounded by the Dutch East Indian doctors, that white rice (so largely eaten by all East Asiatics), being infected with a micro-organism of beriberi, is the means of propagation of the disease, I will simply say that rice is always eaten well cooked (as the bread of the East), and that therefore a micro-organism, if it existed in white rice, would be destroyed, and consequently could not have anything to do with beriberi. I add that for many years Japanese rice has been sold in all our American department stores, and, I hardly need say, is imported uncooked. If it contained the "microbe of beriberi" that microbe would have been rampant among us for many years. We have never had beriberi in New York except on ships which had contracted the disease during their voyage.

Albert S. Ashmead, M.D.,
Late Foreign Medical Director, Tokio Hospital, Japan.

THE "BEMISS RULES" FOR THE DIAGNOSIS OF YELLOW FEVER.

The Louisiana State Board of Health has lately issued a circular embodying the rules arranged by the late Professor Samuel Bemiss. The circular is substantially as follows:

The following groups of symptoms shall be considered to indicate yellow fever:

Group 1.—A person after a sudden attack has a fever of one paroxysm, attended with marked congestion or blood stasis of the capillaries of the surface, conjunctivæ, and gums, with a history of

probable exposure to infection, and no history of a previous attack of yellow fever.

Group 2.—A person after a sudden attack has a fever of one paroxysm, followed by unusual prostration, albuminous urine, yellowness of the conjunctivæ or skin, and having no positively authenticated history of previous attack of yellow fever.

Group 3.—A person has a fever of one paroxysm, albuminous urine, black vomit, suppression of urine, and a general hemorrhagic tendency under circumstances where exposure to infection is a possibility.

Suspicious Cases of Yellow Fever.—The following symptoms, associated with fever of one paroxysm in a patient who has been apparently exposed to infection, and has never had yellow fever, shall be held to justify in either of the six following cases a suspicion of this disease,—viz., (1) Suddenness of attack, either with violent pain in the head and back, injected eyes and face, or marked congestion of the superficial capillaries; (2) want of what correlation between pulse and temperature usual to other forms of fever; (3) albuminous urine; (4) black vomit; (5) general hemorrhagic tendency; (6) yellowness of the skin.

The following cases shall also be suspicious: (7) Any case respecting which reputable and experienced physicians disagree as to whether the disease is or is not yellow fever; (8) any case respecting which efforts are made to conceal its existence, full history, and true nature.

In the event of death in a suspicious case a post-mortem examination should be made, when practicable. Both before and after death yellow fever is especially and pre-eminently characterized by the fact that it is *par excellence* a hemorrhagic fever, marked by capillary congestion and its sequelæ; hence post-mortem evidence of a general hemorrhagic tendency in internal organs, especially in the digestive, in preference to the urinary tract, shall be held to confirm the suspicion.—*New York Medical Journal.*

THE NEW DIAGNOSTIC SPOTS OF MEASLES ON THE BUCCAL AND LABIAL MUCOUS MEMBRANE.

In the *Medical News* for June 3, 1899, Henry Koplik describes more fully than he has done heretofore the new diagnostic spots of measles.

This new sign of measles appears as long as twenty-four hours, forty-eight hours, and even *three* to *five days* before the appearance of the skin exanthema. It is present before the signs of conjunctivitis

appear, and when little or no fever is present. Of fifty-two consecutive patients the diagnosis of measles was made in thirty-two cases before any sign of an eruption appeared on the body,—not even a spot of exanthema. In three of the thirty-two the diagnosis was made three days before any exanthema appeared. In nine cases the sign appeared forty-eight hours before the appearance of the exanthema. In the remaining twenty cases fully twenty-four hours elapsed before any eruption appeared on the skin. In none of the fifty-two cases was the diagnosis wrong.

The sign appears pre-eminently on the mucous membrane which lines the cheeks and lips. It can also be studied on the mucous membrane lining the cheeks opposite the last molar teeth. It appears only on the buccal and labial mucous membrane and not on that of the soft or hard palate or on the mucous membrane covering the fauces. The eruption or sign runs through a sort of cycle. It appears, as stated, twenty-four hours, forty-eight hours, three to five days before the exanthema of the skin. It is at first discrete, then becomes numerous and confluent, and when the skin exanthema appears and is spreading it is at its height. It then begins to fade and disappear. If one looks into the mouth in a case of measles before the exanthema has appeared he sees the usually described redness of the fauces and in some cases a few indefinite spots of red on the soft palate. In a strong glaring daylight one sees at this period on the mucous membrane lining the cheeks (buccal) and lips (labial) a distinct, pathognomonic eruption. This eruption consists of small, irregular spots of a bright-red color; in the centre of each red spot is a minute bluish-white speck. There may at first be only two or three or six such rose-red spots, with the bluish-white speck in the centre. The combination of a bluish-white speck with a rose-red background on the buccal and labial mucous membranes is absolutely pathognomonic of the invasion of measles. Sometimes the bluish-white speck is so small and delicately colored that only in a very direct and strong daylight is it possible to bring out the above effect, but the combination is always present.

Sometimes the number of the spots is very few, and again they may be quite numerous and cover the whole inner surface of the cheeks. When once seen they will always be remembered, but in order to see them they must be looked for by everting the mucous membrane of the lips and that of the cheeks by means of the thumb and index-finger, or with a spatula, and then allowing the strong daylight from a window to fall over the examiner's shoulder on the mucous membrane. Any passing shadow obscures the picture, so delicate is the nuance of these spots at times. They can then never be mistaken for sprue, for sprue is of an opaque-white color, coarser, and at times

plaque-like, while my sign is bluish-white, delicate, and never forms plaques.

Ordinary manipulation cannot remove them, such as passing the examining finger over them, but such brushing as they would receive if the mouth were cleaned by the mother I find sometimes removes them. They can also be picked off with the forceps. If examined they are found to consist of bacteria, diplococci, mostly sometimes streptococci and epithelial scales.

The sign remains at first discrete, but as the rose-red spots with their bluish-white centres increase in numbers, the *rose-red spots* coalesce and a peculiar appearance of the mucous membrane results, there being large areas of rose-red studded all over with minute raised bluish-white specks, relieved here and there by the normal hue of the uninvaded mucous membrane. Finally the whole buccal and labial mucous membrane becomes of a uniform rose-red color, studded with myriads of these bluish-white specks. At this time the skin exanthema has appeared and is spreading. When the skin exanthema is at its efflorescence the buccal eruption has begun to fade and lose its characteristics.

NON-MALIGNANT ULCERATION OF THE ESOPHAGUS.

Russel (*Scottish Medical and Surgical Journal,* April, 1899) states that under the term non-malignant ulceration of the esophagus may be included the following varieties: (1) Ulcers associated with inflammation of the esophagus; (2) ulcers due to corrosion; (3) ulcers from external causes; (4) ulcers the result of the presence of foreign bodies; (5) ulcers associated with various exanthemata (typhoid); (6) syphilitic ulceration; (7) ulcers associated with duodenal ulcers in cases of burning; (8) ulcers found in the foot of diverticula; (9) simple perforating esophageal ulcer.

Simple perforating esophageal ulcer presents practically the same anatomical features as ulcer of the stomach. If small, it retains the classical appearance of sharply cut shelving edges. It may or may not perforate all the coats of the esophageal wall. In some cases the ulcer perforated the aorta before any new fibrous tissue had formed between the tubes. In other cases dense adhesions had formed between the esophagus and neighboring organs. Esophageal ulcer occasionally occurs concomitantly with gastric or duodenal ulcer. Males are much more frequently attacked than females. In twenty-three cases, seventeen were males, six females. It is a disease of middle and advanced years. In only five cases were the patients under 35. Anemic conditions are not mentioned as concomitants of the disease. In some of

the cases ulcer appears to have caused death in persons who had previously presented no pathological symptoms.

The pathology rests in the same position as that of gastric ulcer. Quincke believed these ulcers due to the action of regurgitated gastric juice. Debove and Berrez, however, believe that this view is untenable, and hold that the cause is still undiscovered. No symptom is pathognomonic. In many instances the condition gives rise to no symptoms or to symptoms so slight as to be entirely overlooked. The first symptoms usually appear to be pain on or after taking food and vomiting of the matter digested. The pain in most cases is situated between the shoulders, behind the sternum, or in the back, at the level of the lower dorsal vertebræ. Pain is also occasionally present in the epigastrium. The pain usually begins as the food is being swallowed; sometimes, however, it is not complained of as occurring so early. Later, food is regurgitated as soon as the act of deglutition is completed. At the same time hematemesis, more or less severe, is a common symptom. The bleeding is usually slight. Where hemorrhage was sudden and fatal the cause was always perforation into the aorta or one of its branches. In spite of the apparent obstruction, no actual constriction can be discovered at this stage on passing a sound. The condition may prove fatal from perforation of some important structure, or from exhaustion. Perforation is most commonly into the air-passages and gives rise to coughing after swallowing food, and, later, to a septic condition in the lungs. Perforation of the pericardium, pleura, or one of the great vessels has been reported. The ulcer may go on to cicatrization, and result in a severe stricture. The treatment must consist in the use of bland foods, aided by rectal alimentation, and if the condition be obstinate, by the formation of a gastric fistula. If there be any suspicion of syphilis, antisyphilitic remedies should be tried in the first instance.

BOVINE TUBERCULOSIS.

Bovine tuberculosis has been known to stock-breeders and owners from time immemorial, but the knowledge of its nature was so vague that no efforts were made either to prevent or cure the disease. The present war against consumption in all its forms has naturally aroused interest in this phase of this subject, and in consequence within the past few years much light has been thrown upon animal tuberculosis and the danger of its communicability to man. It seems more than probable that the risks attending the consumption of meat infected with tubercle bacilli has been considerably exaggerated; if this is not so, what then is the explanation of the fact that although since the

middle of the present century meat has been a much more common article of diet than was the case in the first half of 1800, yet within the fifty years just gone by tuberculosis has not only shown no increase, but, on the contrary, has steadily decreased. This happy result is doubtless greatly owing to better sanitation and more healthy hygienic surroundings; but if the meat of infected animals is so deadly as many would have us to believe, it appears reasonable to expect that the disease would be widely spread by it.

There is, however, one form of tuberculosis which has exhibited no apparent decrease. The British Royal Commission, whose report was handed in a few months ago, after referring to the decrease in the mortality rate from tuberculosis makes use of those words: "But whilst this is so, it must be remembered that the rate of mortality from tabes mesenterica, which more than any other represents tuberculosis in infancy, has signally failed to undergo any noteworthy diminution during the very period of sanitary progress which has been associated with such substantial diminution of death from tuberculous affections at all ages in England and Wales, and that this result has coincided in point of time with a large increase in the consumption of milk." Possibly, owing to the greater care taken in many States of this country to insure a pure milk-supply, and to the custom of sterilizing milk more frequently practised here, the death-rate among infants from abdominal tuberculosis is less than in Great Britain; but despite these precautions tabes mesenterica is a much more fruitful cause of death than it should be.

The probability then stares us in the face that impure milk is the chief cause of this large infant mortality. For some time the identity of the organism found in human tuberculosis and that found in animals was stoutly denied by many, but now most authorities are coming round to the belief that the two bacilli are practically the same. Professor Nocard, of Alfort, France, announces that he has every reason to believe that he has succeeded in transforming the human bacillus into the bovine bacillus. It may then be assumed that milk drawn from the diseased udder of a tuberculous cow may, and in many instances will, be the means of implanting the germs of consumption in those—and especially in young children—who partake of it. Opinions differ, however, as to whether the milk of a tuberculous cow, the udder being unaffected, contains the micro-organism of the disease. In 1895 the Massachusetts Society for Promoting Agriculture is said to have demonstrated beyond a doubt that milk taken from a cow with healthy udders may contain tubercle bacilli.

This being the situation, the question may be fairly asked, "What steps have been taken in this country to guarantee a milk-supply free

from infection?" According to Dr. Knopf, writing in the *North American Review* of February last, "there are fourteen States which have bovine laws and regulations, and in which circulars are issued for public instruction in regard to tuberculosis in man,—viz., California, Colorado, Connecticut, Iowa, Maine, Massachusetts, Michigan, New Jersey, New Hampshire, New York, Pennsylvania, Rhode Island, Virginia, and Wisconsin; two of which have bovine laws, but where apparently nothing is done to stop the spread of tuberculosis in man,—viz., Minnesota and South Dakota; one which has bovine laws, but which cannot enforce them for lack of funds, and where thus far the board has only issued circulars on the prevention of tuberculosis in man and beast,—viz., Tennessee; two, the District of Columbia and Oklahoma Territory, which have a law prohibiting the sale of tuberculous milk, but nothing else concerning tuberculosis in man or beast; eight which issue circulars of instruction concerning tuberculosis in man, but where nothing is done in regard to bovine tuberculosis,—viz., Delaware, Indiana, Kentucky, Louisiana, New Mexico Territory, Ohio, Texas, and West Virginia; nine where nothing is done to stop the spread of tuberculosis in either man or beast,—viz., Alabama, Arkansas, Maryland, Mississippi, North Carolina, North Dakota, and South Carolina; seven which have no board of health,—viz., Georgia, Idaho, Montana, Nebraska, Oregon, Utah, and Wyoming; five from which no answer was received,—viz., Florida, Missouri, Nevada, Vermont, and Washington."

It will thus be observed that while fourteen States have adopted and put into force regulations calculated to check the spread of tuberculosis through the agency of milk, the remainder of the States and Territories—excepting the five from which no reply was received—have practically provided no safe-guards against this occurrence. Nevertheless, that the large cities are becoming alive to the perils attendant on the existing state of affairs is revealed by the panic that appears to have overtaken Chicago in regard to the danger of contracting tuberculosis from milk taken from infected cows. The governor of Illinois is vigorously interesting himself in the matter, and has declared his intention of backing up the live-stock commissioners with all the power at his command. The commissioners are to be invested with almost arbitrary authority, and a "tuberculosis congress" is shortly to be held in Chicago, at which the whole question will doubtless be discussed in all its bearings.

The fact should always be borne in mind that with animals, as with human beings, tuberculosis does not spread much in those which have plenty of fresh air and light. The health authorities on the part of the general public should therefore insist that the cows from which

milk is obtained should be kept in well-lighted and well-ventilated sheds or barns, and should wherever possible be turned out every day in order that these places may be well aired. In those cases in which the udder is infected the only remedy is to slaughter the animals; in other cases in which the beasts react to the tuberculin test isolation should be insisted upon.

The farmer, butcher, and cow-keeper can, of course, effect much by voluntary efforts to protect the public against disease in animals, but, unfortunately, this course, when it conflicts with their love of gain, is not likely to be followed. If, however, as with the inhabitants of Chicago, the public are thoroughly awakened to the danger of tuberculous milk, and refuse to buy the fluid unless guaranteed pure, the owners of cows will quickly find it to their interest to supply such an article. In the words of Mr. W. Hunting: "By man's ignorance the disease has been allowed to spread; by man's knowledge it can be controlled."—*Medical Record.*

IMPORTANT CHARACTERISTICS DISTINGUISHING THE BACILLUS OF LEPROSY FROM THAT OF TUBERCULOSIS.

Dr. E. Jeanselme (*Presse Médicale*, April 8) says that while the bacillus of tuberculosis and that of leprosy possess almost the same form and almost identical reactions, they are nevertheless distinguished by the following important characteristics: (1) In leprosy the number of bacilli infiltrating the tissues is enormous, so great that the mass of bacilli constitutes an important part in the volume of the leprous nodule. (2) The bacilli of leprosy are rarely separated from one another, but almost always exist as colonies, the appearance of which may be likened to a bunch of cigars or to an ear of corn. (3) The bacillus of Hansen cannot be cultivated by any known means. The numerous experiments of Campana, Leloir, Arning, Ducrey, Kanthack, Barclay, and others have been varied beyond number; all known methods have been tried and all have failed. In several instances in which the effect appeared to be successful, examinations of the culture showed only the bacilli of tuberculosis. (4) The bacillus of Hansen cannot be inoculated in animals. It is impossible to enumerate the various experiments that have been made without result in the endeavor to transmit leprosy to different kinds of animals. (5) The cells that are invaded by the bacillus of Hansen give only a weak reaction. We never find in leprous nodules the grouping which belongs to the elementary tuberculous follicle. (6) The resistance of

the bacillus of Hansen to physical and chemical agencies is less than that of the bacillus of Koch. According to the observations of Schaeffer, the bacillus of leprosy, left five or six days in a solution of sulphuric acid, 5 to 100, is no longer colored; while the bacillus of tuberculosis will still retain its coloring matter when it has been subjected to the same treatment for eleven or twelve days. (7) The leper and the tuberculous subject do not react in the same way when submitted to injections of tuberculin. In spite of these differences the analogies are such that we cannot help asking if the bacillus of leprosy and that of tuberculosis are not the issue of a common ancestor. Although it may be impossible to verify this hypothesis, it is certain that, at the present time, they represent two distinct species. We are totally ignorant as to the habitat of the bacillus of leprosy when ouside the human organism. It has been sought in vain in the soil, even in cemeteries of lepers, and in the foods which have been considered as favorable to the development of leprosy.—*Medical Record.*

BOOK NOTICES.

A Manual of Hygiene and Sanitation. By Seneca Egbert, A.M., M.D., Professor of Hygiene in the Medico-Chirurgical College of Philadelphia. In one handsome 12mo volume of 360 pages, with 63 engravings. Philadelphia and New York: Lea Brothers & Co., publishers.

Hygiene and sanitation are large subjects, and Dr. Egbert has done well to present them in such a shape that students shall have a convenient handbook on these all-important branches of medicine. Sanitation or sanitary science deals with matters pertaining to the general public health, while personal or domestic hygiene is more closely related to the affairs of the individual or household. Chapters are devoted to bacteriology, with excellent illustrations, by Dr. William M. Gray, the well-known government expert; the atmosphere; ventilation and heating; water; food; stimulants and beverages; personal and school hygiene, disinfection, and quarantine; the removal and disposal of sewage; and vital statistics. The closing chapter, on the examination of air, water, and food, is, perhaps, too short, but is practical and plain, so far as it goes. The author in the first chapter discusses the phagocystosis theory of Metchnikoff, the humoral theory of Buchner, and the antitoxin theory of Ehrlich, and seeks to place the three in harmony. In his chapter on the air he gives succinctly the results of the elaborate work of Mitchell, Billings, and Bergey on the composi-

tion of the expired air and its effect upon animal life. Oxygen and argon are discussed, but no mention is made of Lord Kelvin's recent statement, that the world's supply of oxygen is giving out. As the only recognized source of oxygen is from the vegetable kingdom, and as the forests and plant-life generally are gradually disappearing from the globe, there may be some truth in this assertion. Dr. Egbert does not believe in borrowing trouble from the twenty-second century, as we have more than enough to occupy us with in our present ills.

A valuable portion of the book is the chapter on filters; and here we may say that the illustrations add greatly to a clear understanding of the text. So also disinfecting apparatus, and the proper arrangement of plumbing and modern water-closets, traps, etc., are well shown. The modern sanitary bedstead, so well described recently by the late Lawson Tait, ought also to have a place in the book. We believe the author will be rewarded with a very wide circulation of this manual, so full of practical information presented in an attractive manner.

A Text-Book of Anatomy. By American Authors. Edited by Frederic Henry Gerrish, M.D., Professor of Anatomy in the Medical School of Maine, Bowdoin College. Philadelphia and New York: Lee Brothers & Co., 1899.

Perhaps there are few subjects upon which a text-book might not be more easily introduced than one on anatomy. There has been very little added to our knowledge of gross anatomy in many years. The improved methods of illustrating text-books, and the more modern and practical manner of presenting this subject in common with the various other departments of medicine have given authors a legitimate reason for bringing out new works on anatomy. The latter consideration seems to have been the chief motive of the author in preparing this work. Although its illustrations, both in excellence and in number, leave little to be desired, the most marked feature is the breaking away from old lines in the text. Other recent works on anatomy have been profusely illustrated, but in the text they have followed the old models very closely.

The work opens with an "introductory" chapter, by Dr. Gerrish, that cannot fail to be of service to the student in beginning his studies. The following chapter, by the same writer, deals with "elementary tissues and the structure of membranes and glands." Dr. J. P. McMurrich has contributed the chapter on "embryology." The propriety of treating this subject in a text-book on anatomy may well be doubted. The time has come to leave the study of this branch to the special works on the subject. This course has been followed by Morris in his excellent treatise on human anatomy.

The "bones" and "articulations" are described by Dr. George Woolsey. The section on "muscles" and "fasciæ" are contributed by the editor. The grouping of the muscles for study according to their principal actions should be a distinct aid to the student, and the method of illustrating the origins and insertions of muscles is most impressive.

Some departure in nomenclature is also noted. This, we fear, will confuse the student and physician not a little, unless anatomists generally adopt the terms. For example, the supinator longus is described under "brachio-radialis." This term, it must be admitted, has the merit of being descriptive of the location of the muscle, as have the other slight modifications observed. The illustrations of this section are numerous and excellent.

Dr. A. D. Bevan is the author of the section on the "arteries," and Dr. G. Woolsey of the section on "veins." The following two sections on the "lymphatic system" and the "cerebro-spinal axis," respectively, have been contributed by the editor. Dr. W. Keiller describes the "nerves." The organs of special sense—the "skin," the "nose," and the "eye"—have been described by Dr. Keiller, and the "tongue" and the "ear" by Dr. Gerrish. The description of the "organs of generation" has been allotted to Dr. G. D. Stewart. The remaining sections, the "organs of digestion," the "organs of respiration," the "urinary system," the "ductless glands," "relational anatomy," and "practical anatomy" are all from the pen of the editor.

The aim of this book is to take a place between the "compend," which is useful only to refresh the memory after the subject has been properly studied previously, and the "encyclopedia" work which makes study difficult. The text is complete, but plain and brief. In the number and excellence of the illustrations this book probably leads.

The typography, paper, and binding are all that could be desired. A special feature is made of a "flexible, water-proof" binding, which may be sponged indefinitely, which especially adapts it for a dissecting-room guide. This is an excellent work for study or reference.

The Pathology and Treatment of Sexual Impotence. By Victor G. Vecki, M.D. From the author's second German edition. Revised and Rewritten. Philadelphia: W. B. Saunders, 1899.

The author has treated this subject in a more thorough and systematic manner than is accorded it by the majority of writers. He says, "To write on the much-scouted subject of sexual impotence is a venturesome undertaking under all circumstances; but to write without the customary affectation and hypocritical rolling of the eyes, to speak the bare truth, surely requires even greater courage." Dr. Vecki seems to have had the courage to express his convictions freely and fully.

But little, if any, exception can be taken to such portions of the work as refer to facts that have become accepted. There remains much to be learned on the subject, and doubtless objection may be raised to some of the views held by the author on certain points.

This book is, however, a valuable addition to the subject of sexual impotence, and cannot fail to be helpful to those physicians who are called upon to treat this condition.

PRACTICAL URANALYSIS AND URINARY DIAGNOSIS. A Manual for the use of Physicians, Surgeons, and Students. By CHARLES W. PURDY, M.D., LL.D., Fourth revised edition. Philadelphia, New York, and Chicago: The F. A. Davis Company, publishers.

This book appeared in its first edition in 1894. It received very favorable press comments at that time, and at once took its place among the standard medical works. The second and third editions rapidly followed the first, and now the fourth has appeared. This would seem to be sufficient praise for any book.

The author has embraced the present opportunity to bring the text fully up to date. To this end a number of changes appear in several chapters.

Both physicians and students will find this book a thoroughly reliable and satisfactory guide in this important department of medicine.

THREE THOUSAND QUESTIONS ON MEDICAL SUBJECTS, ARRANGED FOR SELF-EXAMINATION. Second Edition. Philadelphia: P. Blakiston's Son & Co., 1899.

These questions are classified under the different departments of medicine, and enable a student to rapidly review any subject. Each question is followed by numbers which refer to a certain book and page, where the correct answer may be found. The list of questions seems quite comprehensive, and, while not intended to take the place of systematic study, will certainly prove of value as a means of refreshing the memory.

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